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JOSEPH COATS, M.D.,

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GLASGOW MEDICAL JOURNAL.

No. I. JANUARY, 1880.

ORIGINAL ARTICLES.

PRACTICAL PAPERS ON THE MATERIALS OF THE ANTISEPTIC METHOD OF TREATMENT.

By GEO. BEATSON, B.A. (Cantab.), M.D. (Edinb.)

I. ON CARBOLIC ACID AS USED IN LISTER'S ANTISEPTIC SYSTEM.

In contributing to the *Glasgow Medical Journal* a series of practical papers on the "Antiseptic Method" of treating wounds, I have been in a great measure influenced by the fact that the laborious researches of Mr. Lister, and the method of practice which he has founded on them, have been presented in a disjointed and fragmentary manner. This, no doubt, has been due to the method having passed through a gradual stage of development, year by year the various materials employed being successively superseded by some newer and more efficient substitutes, until there has been reached the high degree of perfection to which the system has now attained. As a consequence of this state of matters, one who would make himself acquainted with the details of Mr. Lister's antiseptic system must search laboriously through the medical journals of several years, unless he be content with the short account written by Dr. Bishop in *Swain's Surgical Emergencies.* This searching in journals is not always convenient, and I have thought that it would be interesting to the readers of the *Journal* to have brought before them, in a connected form, an account of

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the various materials employed in Mr. Lister's method, together with a description of the mode of using them. There will thus be nothing original about the papers, but I hope they will represent faithfully the antiseptic system, just as I had the privilege of learning it from Mr. Lister, and as it is embodied in his writings. I shall, as far as possible, give references for any statements I may make, which will, I hope, render these papers of more value, as then readers of the *Journal* can refer to the original articles, should they desire to do so. Although the best way, no doubt, of learning the system is to visit Mr. Lister's wards and see the care and attention which he bestows on all the minutiæ of his plan, this is not always feasible, and so I will endeavour to make these papers as practical as possible. Accordingly, I will describe the extensive apparatus made use of, I will dwell on those minutiæ which may seem to some pedantic, but which the germ theory renders imperative, and I will so attempt to bring together the instructions now scattered about in different Journals, that were any one desirous of taking up the system he might get here all the information that he needed. I have, however, no intention of writing a history of the rise and progress of the antiseptic system, and so I shall not refer to materials that are no longer used.

The present paper will be taken up with some observations on carbolic acid, as it is the chief agent employed in carrying out the antiseptic system, and as there are several points connected with it which are of interest and should be borne in mind.

Carbolic Acid or Phenol, C_6H_6O. This substance, as its name implies (*carbo*, coal), is one of the products obtained by the destructive distillation of coal in the ordinary process of gas-making. It has really an ancient history, for it is evidently the substance mentioned by Pliny which, when coal-tar was burned, rose in vapour and became attached in little particles to wool placed above. It was also indirectly used as a disinfectant during the great plague of London, for the tar barrels which were burnt constantly at that time must have caused a certain amount of carbolic acid to escape into the air. It was not, however, until the year 1834 that it was first described by Runge, a German chemist. Some years afterwards, in 1841, its constitution was investigated by Laurent, who called it the hydrate of phenyl, because he regarded it as a hydrated oxide of the compound radicle phenyl. Since then it has received other names, as phenol, phenic acid, phenylic alcohol, and creasote. This last term is a misnomer, for creasote and carbolic acid are distinct substances, as shown, among other distinguishing marks, by their action on a ray of polarised light, creasote turning the plane of polarisation to the right, while carbolic acid produces no such effect. A much more important point connected with the substance under consideration is the question as to its right to be called an *acid.* The circumstances which gave rise to this character being assigned to it were the facts that carbolic acid was separated from tar oil by means of an alkaline solution, and that it appeared to form a compound with caustic potash. On further investigation, however, it was found that it was deficient in the characteristics of an acid, inasmuch as it did not redden litmus and, as Calvert showed in the *Journal of the Chemical Society* (vol. viii, pp. 67, 68), did not form definite salts with bases. In a more recent communication to the *Pharmaceutical Journal* (9th January, 1875), Mr. W. E. Bickerdike, F.C.S., has discussed the question very fully, and it is clear from what he has written on the subject that in its chemical relationships carbolic acid exhibits the characters of an *alcohol.* Mr. Bickerdike agrees with Laurent in regarding it as the hydrate of the hypothetical radicle phenyl, C_6H_5, just as ordinary alcohol is the hydrate of ethyl, C_2H_5. Without going into the confirmatory evidence which he adduces from the chemical behaviour of the compound with other substances, there seems no reasonable doubt in concluding that carbolic acid partakes more of the nature of an alcohol than an acid. Those who take this view class it under the secondary aromatic alcohols, and in this connection it has received the name of *phenol.* But Mr. Bickerdike goes further, and thinks that just as we have "absolute alcohol" so there is nothing wrong in speaking of absolutely pure phenol as "absolute phenol," and this is the name which has been bestowed on a certain preparation of carbolic acid, of which I shall have more to say hereafter. Under these circumstances the word phenol, during the remainder of this paper, will be used as synonymous with carbolic acid. As to the meaning of the term phenol, it is evidently connected with the Greek word *φοίνιξ*, purple, and it must have been given on account of the peculiar effect which light has on this substance, should it contain any cresol, for it then assumes a purplish-red colour. What is the explanation of this occurrence I cannot say, but I believe that, before his death, the late Mr. Calvert directed his attention to this point, with a view of seeing whether use might not be made of it in the art of photography, just as has been done in the case of nitrate of silver.

This leads me to say a few words on the manufacture of carbolic acid. It has only of recent years been possible to obtain it in anything like a pure state, and this is, in a large degree, owing to the exertions of the late Mr. Calvert, who was the first to manufacture it in the crystalline form. When Mr. Lister commenced his treatment of wounds with carbolic acid, both the crystalline and the liquid forms of the substance at that time sold in the shops were most impure; so much so that, in the *Lancet* of 16th March, 1867, he speaks of carbolic acid "as almost absolutely insoluble in water," a state of things which shows that he must have been dealing with a very impure article, for we now know that carbolic acid is soluble in water, and the purer it is the more soluble it becomes, so that its solubility is one of the best tests we have of its purity. Another circumstance which has given a stimulus to the manufacture of this substance, besides its employment in medicine and surgery, is the extensive use that is now made of it in the arts. No less than 50 per cent of the carbolic acid manufactured is used for preparing the yellow dye called picric acid, and another named coralline. Although Mr. Calvert is dead, the works which he established at Bradford are still carried on under his name by C. Lowe & Co.; but another and more recent firm, and one that has been very successful in the manufacture of carbolic acid, is that of Bowdler & Bickerdike, of the Eagle Chemical Works at Church, Lancashire. One of the members of this firm was manager to the late Mr. Calvert, and so they have the benefit of a large amount of practical experience, and I have alluded to them as it is one of the varieties of carbolic acid manufactured by them that is at present strongly recommended, in the *Dublin Journal of Medical Science*, August, 1879, by Mr. Lister, and has been used by him for some years. I refer to the preparation which is termed *absolute phenol*.

Although carbolic acid can be obtained in more ways than one, as by the action of heat upon salicylic acid or by the dry distillation of gum benzoin and other resinous substances, yet commercial carbolic acid is prepared solely from coal tar, the basis of the mode of preparation being really the method of Laurent, in which the heavy oils of tar are treated by alkalies. Tracing the matter from its commencement we find that the tarry fluid which deposits in the wells of the gas works is a complex mixture, including benzol, phenol, cresol, napthalin, anthracene, and other substances, as well as "pitch," which forms about 50 per cent of the tar. The above substances are separated by distillation, which roughly "fractions" them into several portions, those lighter than water being first collected, next, those that are heavier, and lastly, the thick viscid residue is run out, while still warm, into properly arranged chambers to form the "pitch" of commerce. As the density of the liquid approaches that of water, phenol and cresol distil over. It is, therefore, from a portion of the distillate, having a sp. gr. of ·98–1·00, that these products are further separated. This separation is accomplished by washing the distillate with soda-ley, which dissolves these substances, and, on neutralising the ley with sulphuric acid, the crude phenol and cresol separate as an oily layer. This oily layer contains, in addition, water, pitch, and other impurities, and the next object is to remove from it the crystallised phenol, leaving behind the cresol and the other impurities. This is accomplished by distillation and other processes, and the extent to which the impurities are got rid of determines the quality of the phenol, so that we have it in different states of purity. Messrs. Bowdler & Bickerdike recognise three qualities. The first is what they term, for the reasons I have already alluded to, "absolute phenol," which is simply chemically pure carbolic acid, and contains no trace of cresol, xylol, or other impurities. The second quality, or No. 2 acid, manufactured in the glacial form, is not a pure substance, having an admixture of cresol, but less in amount than the third quality or No. 3 acid, which contains as much as 25 per cent of that substance. The No. 2 acid corresponds in all particulars to the carbolic acid of the British Pharmacopeia. The distinguishing point between these different qualities of acid is that they have different points of crystallisation. Thus, absolute phenol will crystallise about 105°–107° F., whilst the No. 2 crystallises about 95° F., and No. 3 about 85° F.

It may not be out of place here to say a few words upon this substance termed *cresol*, the presence of which, in any preparation of carbolic acid, renders it impure, and seems to confer on it irritating qualities. It is the homologue of phenol, but differs from it in not being crystallisable. There is the same dispute about it as about carbolic acid in reference to its chemical nature, and while some, looking on it as an alcohol, term it cresol, others consider it an acid, and call it cresylic acid. It occurs in three forms—para,- meta,- and ortho-cresol—but it is only the first form that is present in any quantity in the crude cresol derived from coal tar. It is very deliquescent, and it is its presence in commercial carbolic acid which causes the latter to liquefy on exposure to the air, and assume the purple-red colour which it does. Although very deliquescent, it does not mix with water so completely as phenol, and this fact is probably the cause of its irritant qualities, for no doubt it does irritate and affect the skin in a way that pure phenol does not. The explanation of this irritation has recently been pointed out by Mr. Lister. (*Dublin Journal of Medical Science*, August, 1879.) He directs attention to the fact that an impure carbolic acid, in other words, one that contains cresol, and consequently other tarry impurities, is imperfectly soluble in water. As a consequence of this, minute particles of undiluted acid become deposited on the epidermis, and act upon it with caustic effect. Any one who has worked much with carbolic acid must have noticed how some solutions affected, most unpleasantly, the hands, causing anæsthesia and uneasiness, while, at other times, solutions of similar strength have produced no such effect. This occurrence has been due to the employment of substances of different purities; and, in a general way, it may be said that the amount of inconvenience caused to one's hands by the carbolic solutions of ordinary strength, say of 1-40, is a rough indication of the purity of the article. Tingling and uneasiness in one's fingers plainly indicate an impure acid. Pure cresol can scarcely be obtained, owing to the great cost that must be incurred in preparing it, because, not being crystallisable, resort must be had to special processes to purify it, for fractional distillation would of course have little effect in separating from it bodies of similar boiling point. The purest cresol in the market contains 15 to 20 per cent of phenol, and traces of tarry matters. This difficulty in obtaining pure cresol has led to the derivatives of cresol not being so perfectly studied as those of phenol, and this is unfortunate in one way, for it is clear, from the result of practical experiments, that although cresol by its presence renders phenol somewhat irritating, yet it in no way interferes with the antiseptic properties of that substance. Indeed, it is quite as effective an antiseptic as phenol; and the liquid carbolic acid which is so much sold in shops as a disinfectant is in reality cresol, with some traces of phenol in it; also the carbolic acid disinfecting powders, so largely employed for sanitary purposes, are made up of cresol mixed with some neutral material, and they contain only about 15 per cent of phenol or carbolic acid. Owing to its not being used much in the arts, as for dye making, cresol is much cheaper than phenol, and when we get cheap forms of carbolic acid we may be sure that we are purchasing a material composed largely of this substance, and we must be prepared for its strong odour and irritant qualities. It must, of course, be remembered that these are only drawbacks which, while better avoided, do not interfere with the successful carrying out of the *antiseptic system* with such an acid; and I have no doubt that a spray made with the No. 3 acid is as reliable as one made with phenol, though not so pleasant to work in. In fact, many of Mr. Lister's most successful cases were conducted to a favourable issue when No. 3 acid was used; for, when I dressed under him in the years 1872 and 1873, in the old Edinburgh Royal Infirmary, that was the quality of carbolic acid which was employed; and I believe I am right in stating that the antiseptic gauze, as usually sold, is yet impregnated with the No. 3 acid. This fact may account for the irritation which it sometimes causes in some skins, owing to the acrid properties of the cresol in it, but it also shows that it is quite reliable as an antiseptic, seeing the number of successful cases obtained under its use. I understand that recently, in London, gauze has been prepared with absolute phenol, and it can be at present obtained from the Apothecaries' Company here; but I shall allude to this point more fully in another paper, when the gauze is spoken of. Meanwhile, I should think that what has kept up the demand for the No. 3 acid is the fact that it is more than three times cheaper than phenol, the *hospital* price of the former being 1s. 1d. per pound, and of the latter 3s. 6d., in each case a considerable quantity being taken. This fact must no doubt weigh with those who have the management of large hospitals, for economy is the order of the day impressed upon them by their superiors. Some may say, Why not strike a medium and employ the No. 2 acid? Well, this might be done, but it would be found, I believe, that this quality is nearer in composition to the No. 3 than to the phenol, and that it contains so much cresol as to impart to it similar irritant qualities; so that if Mr. Lister's advice is not followed, and it is determined, on the ground of economy, to employ some cheaper form of acid, putting up with its irritant qualities and tarry odour, it is best to adopt the No. 3 acid. It consists of the loose, detached crystals obtained in the earlier stages of the purification of the acids, before the re-distillation and other modes of treatment resorted to in preparing phenol. It is the most moderate in price, is not much more impure than the No. 2, and for surgical purposes is equal in its *antiseptic* energy to the highest quality of phenol.

With these remarks on the different varieties of carbolic acid, I shall pass on to say a few words about *absolute phenol*, which is the form of acid recommended by Mr. Lister for carrying out his system, and which is chemically pure. Notwithstanding the fact that it is prepared from coal-tar, it resembles in its properties the phenol obtained artificially by the distillation of the resin of xanthorrhœa hastilis, or of salicylic acid with caustic lime. It is a beautiful preparation, of a pure white, and being entirely free from tarry or other impurities, it has a slight, almost fragrant, and certainly not unpleasant smell. It dissolves easily and completely in water owing to its purity, and hence, for the reason mentioned before, it is less irritating to the skin or tissues. Pure phenol is soluble in 14-16 parts of water at the ordinary temperature, 60° F., and at 156° F., and over, water and phenol are freely miscible and soluble in any proportion. Another point which distinguishes it from the lower qualities of acid is that it *scarcely* deliquesces when exposed to the air in cold weather, 40°-50° F., while they rapidly become liquid and assume a purple-red colour. It is sent out by Messrs. Bowdler & Bickerdike in 1 lb. bottles and in larger jars, and is either in the glacial or granular form. In the latter case it is termed "granular absolute phenol." The advantage of the granular form is that it renders it most convenient for dispensing, as it can be taken out with a spatula, weighed and mixed with water. All melting of the acid is thus avoided. Another advantage belonging to the granular form is that it does away with all breakage of the bottles by expansion, for though, as I just said, it *scarcely* deliquesces at ordinary temperatures, yet under certain circumstances it does so to an extent sufficient even to burst the bottles if it is in the glacial condition. The granular form, by the space between the particles, hinders this. Such being the several points that give this form of carbolic acid a superiority over the other qualities, the last matter to refer to is its price, which will be considered very moderate when we bear in mind that it is not more than the No. 2 acid of Calvert (which is of the strength and quality specified in the B. P., and is not free from cresol), while in quality it is fully equal to Calvert's No. 1, which is stated to be of extra purity and fit for internal use. For hospitals special quotations are charged, which reduce the price to 3s. 6d. per lb. Of course, it could not be purchased by individuals at this rate, but I am informed that it can be obtained by the profession in Glasgow at 4s. per lb. from the Glasg. Apoth. Co., or from Rob. Watt & Co., 61 Bath Street. I may say that the price of Calvert's No. 1 is 6s. 8d. per lb.

under the same circumstances, though no doubt to hospitals it would be given at a reduced rate. I understand that the demand for absolute phenol is ten times as great as it was a year or two ago, and that it is daily extending. The Government have adopted it for use in the naval hospitals, and it is extensively employed in all the leading hospitals in this country. It has been sent for some years to those of Germany, and in lesser quantities to America and to various continental countries.

As regards the purity of carbolic acid, there is no ready test which one could employ offhand. It is true that Mr. Crookes, in the Report on the application of Disinfectants in arresting the spread of the Cattle Plague, has pointed out a ready method of detecting adulterations by observing the solubility of a given sample, and he has also given some tests which, however, have no pretensions to scientific accuracy. If this accuracy is required, advantage should be taken of a point which I have already mentioned—viz., that the different varieties of acid have each their own crystallising point, which indicates their purity. Under these circumstances recourse should be had to distillation with a thermometer. For example, if some carbolic acid be distilled in a glass retort, any water it may have absorbed will pass over with the first 10 per cent, and if after that a sample be collected in a dry receiver, its crystallising point will indicate any admixture of cresol, pure phenol crystallising about 105°–107° F., the No. 2 acid about 95°, and No. 3 about 85°. It may also be laid down as a general rule that, if carbolic acid, on exposure to the air, becomes of a brownish-red colour, it contains impurities. Thus I have by me a bottle of Calvert's No. 3 acid for disinfecting purposes, and for convenience in mixing I converted it into the permanently liquid form by the addition of 5 per cent of water, and in a short time it assumed the purple-red colour I have spoken of. Practically speaking, however, the most ready test for surgeons who use this substance much is its solubility in water, and when we find the watery solutions of a brilliant clearness, and the tarry sulphuretted smell of the cruder acid replaced by a scarcely perceptible and rather fragrant odour, and when no inconvenience is perceived by the hands in working with the ordinary solutions, we may be sure that we are dealing with a pure and almost unirritating substance.

The circumstances which led Mr. Lister to direct his attention to carbolic acid are given in one of his papers (*Lancet*, March 16, 1867), and I cannot do better than quote the passage, for it possesses now considerable interest. "In the course of the year 1864," he says, "I was much struck with an account of the remarkable effects produced by carbolic acid upon the sewage of the town of Carlisle, the admixture of a very small proportion not only preventing all odour from the lands irrigated with the refuse material, but, as it was stated, destroying the entozoa which usually infest cattle fed upon such pastures.

"My attention having for several years been much directed to the subject of suppuration, more especially in its relation to decomposition, I saw that such a powerful antiseptic was peculiarly adapted for experiments with a view to elucidating that subject, and while I was engaged in the investigation the applicability of carbolic acid for the treatment of compound fracture naturally occurred to me." Such being the circumstances which gave rise to the employment of carbolic acid by Mr. Lister in his surgical work, it may not be out of place to give here the reasons which have led him, after an experience of twelve years, to adhere to this substance as the most suitable for carrying on his system. These reasons are nowhere better and more concisely given than on the occasion of his visit to Dublin in August, 1879, to receive the degree of M.D., *honoris causâ*, from the University of Dublin. At that time he visited the Richmond Hospital, and in the course of his explanatory remarks on his method of dressing wounds, he spoke as follows:—"I am not bound to any particular agent. We are always ready to use any other that can be shown to be preferable; but as far as I have gone carbolic acid seems to possess, for the great majority of cases, the most convenient properties. It is exceedingly powerful in destroying bacteria; it is volatile, which is a great advantage for providing an antiseptic atmosphere; it is soluble in a great variety of materials—so different, for example, as water, the fixed oils, and melted resin. This faculty of blending with materials of various natures gives carbolic acid great powers as a detergent. It penetrates through greasy matters with perfect facility. If some greasy dirt exists between the teeth of your forceps, or, say, is on the surface of the skin or in its hair-follicles, carbolic acid will penetrate and purify this grease in a way which most salts which are soluble in water cannot do. On the continent some of our earnest German friends, before they operate on a part, carefully cleanse the skin with ether and soap. That is altogether unnecessary. Carbolic acid will do all that is needful; it will clean the most dirty skin in a few minutes." (*Dublin Journal of Medical Science*, August, 1879.)

In what forms then is carbolic acid now used by Mr. Lister in his antiseptic system? In three forms. (1.) *Watery solutions.* These are two in number, (*a*) One of the proportions of 1 part of acid to 20 of water, termed "One to twenty lotion"; (*b*) Another, of weaker strength, of the proportion of 1 part of acid to 40 of water, termed "One to forty lotion." At one time weaker solutions than the above were employed, but they were discontinued, as experience did not show them to be sufficiently trustworthy (*Lancet*, March 13, 1875). (2.) *Oily solutions.* These are also two in number, (*a*) the stronger, composed of 1 part of acid to 10 of olive oil; and (*b*) the weaker, of 1 part of acid to 20 of oil. (3.) *Spirituous solutions.* Of these there is only one, of the strength of one part of acid dissolved in five parts of spirits of wine or methylated spirits. This powerful lotion Mr. Lister uses only for cases of compound fracture seen for the first time several hours after the accident, and it is injected by means of a gum-elastic catheter, connected with a syringe by a piece of caoutchouc-tube (*Lancet*, March 13, 1875).

If expense is no object, the best oil for making the oily solutions is olive oil, but, where economy must be considered, rape oil, which costs about 9d. a quart, is an excellent substitute. Many employ linseed oil, but it is objectionable, not only on account of the peculiar odour it has, but, as Mr. Lister has pointed out, from the permanent staining which it produces in linen. The best way of preparing the oily solutions is to put a few ounces, say four, of the oil into the bottle required. To this add the necessary quantity of heated and melted acid, mixing them thoroughly together. Then add the requisite amount of oil to make up the bottle to the strength required. If this plan of procedure is not adopted, the oil and acid do not mix well together, for if all the oil is poured into the bottle and then the acid added, the latter floats on the top of the oil, and nothing will get them thoroughly blended. So also with making the watery solutions, put in a few ounces of water into the bottle, then add the heated and melted acid, and when blended, fill up with the proper amount of water. If the lower qualities of acid are being employed, it is better to filter the solutions through several ply of muslin. Recently, Mr. Lister has drawn attention (*Dub. Med. Journal, August, 1879*) to the fact that water holds the acid feebly, and so readily lets it fly off to attack anything else. Hence the vigour with which the one to twenty solution affects the skin. Oil, on the other hand, holds it strongly, and, therefore, lets it go with difficulty. Hence, a catheter smeared with the one to twenty solution of oil does not irritate the delicate mucous membrane of the urethra. Resin holds the acid still more tenaciously. Thus, from the behaviour of this substance under different conditions, there has been brought out, as Mr. Lister observes, the following highly interesting and new principle in pharmacy:—"That the energy of action of any caustic or irritating substance depends, not merely on the proportion in which it is present in its vehicle, but also on the degree of tenacity with which its particles are held by it."

The only other point I would allude to in connection with carbolic acid is its effect on the urine of some patients whose wounds are being dressed with it. In these cases the urine, on standing, becomes dark—sometimes quite black in colour, accompanied in some instances by a deposit. Although I have not been able to lay my hands on the references, I believe that Mr. Berkeley Hill was one of the first to draw attention to this peculiar condition. The real import of it is a matter that has given rise to a difference of opinion, some holding that it is caused by the elimination of some educt of carbolic acid itself, formed by its partial oxidation, while others have regarded it as caused by the escape of the colouring matter of the blood in the form of an increased amount of indican, which substance is now regarded as the colouring matter of the urine, and is held by most pathologists to be derived from the destruction of the hæmoglobin, or well known colouring matter of the corpuscles. Städeler has stated that carbolic acid is to be found in human urine as well as in that of cows, dogs, horses, and other animals, but Hoppe-Seyler has shown that this is not the case, since it cannot be obtained from it by distillation, and he thinks that it is formed during the process employed by Städeler, most probably out of the indican of the urine. Without going into the question further, one point to be borne in mind is that there seems to be no direct relation between the degree of toxic action of carbolic acid and the peculiar coloration of the urine, the latter being met with in cases which present no signs of discomfort from absorption of the acid, and this for lengthy periods (Sansom). Another fact of importance is that the absence of blackish urine does not prove that the patient is not suffering from carbolic acid poisoning. As to the best test for indicating the presence of carbolic acid in the urine, the one usually employed by Mr. Lister is impure commercial sulphuric acid, *i.e.*, sulphuric acid which contains some of the oxides of nitrogen. This, when poured on to the urine so as to have two layers, leaves a dark green ring between the two, if carbolic acid be present.

To recapitulate, then, in conclusion, I would direct attention to the following points:—

1. Up to the present time Mr. Lister has found carbolic acid the most efficient agent for carrying out his system.

2. Of the several varieties of acid in use, he recommends *absolute phenol*, the granular form of which seems the most convenient to work with.

3. The reason for this preference is the purity of the substance, which forms clear lotions, free from all unpleasant odour, and less irritating to the skin of the patient and the surgeon's hands.

4. Should a cheaper variety of acid be used, on economical grounds, the No. 3 acid seems the most suitable, but it is advisable that its solutions should be filtered through several ply of muslin.

5. Though carbolic acid is termed an *acid*, there is chemical evidence in favour of its partaking of the characters of an *alcohol*, and hence the term phenol, which it has obtained under this latter view, is synonymous with the more general one of carbolic acid.

6. For practical purposes, the readiest test of the purity of carbolic acid is its solubility in water, and this is indicated by its pungency, and by its effect on the skin, a pure 1-40 solution being scarcely, if at all, inconvenient to the hands.

7. The carbolic lotions in use in the antiseptic system are (*a*) two *watery* ones, (*b*) two *oily* ones, and (*c*) a *spirituous* one, for a special class of cases.

8. The urine of patients dressed with antiseptic dressings may become blackish in colour on standing.

9. This probably indicates the presence of an increased amount of the indican or colouring matter of the urine due to the presence of carbolic acid in some form in the blood.

10. The most convenient test for carbolic acid in the urine is the ordinary commercial sulphuric acid.

(*To be continued.*)

MEDICAL EDUCATION AND QUALIFICATION.

The Introductory Address at the Opening of the Winter Session of the Glasgow Royal Infirmary School of Medicine. Delivered 29th October, 1879.

By HENRY E. CLARK, M.R.C.S., F.F.P.S.G.,
Lecturer on Anatomy.

Gentlemen,—We enter to-day upon the fourth Session of the Glasgow Royal Infirmary School of Medicine. Three years ago, at the opening of the School, the place which I now occupy was taken by one who was, in great measure, the founder of it, and whom, to-day, for the first time, we miss from our midst. I refer to Dr. J. G. Fleming. For nearly fifty years Dr. Fleming had been engaged in medical practice, and it may be said, without exaggeration, that during the whole of that time he took a warm interest in the affairs of the Glasgow Royal Infirmary. Having, in his early days, acted as house surgeon in the Infirmary, he afterwards became one of the visiting surgeons, and more recently one of the managers, having occupied the latter position during a period of twenty-two years (as president of the Faculty of Physicians and Surgeons, as manager nominated by the Faculty, and as manager elected by the general board of contributors), and being still occupied with the work of the Institution when seized with his last illness. Dr. Fleming took an especial interest in the School of Medicine, and, as convener of the School Committee, was intimately concerned in its management; it is in great measure due to his unceasing and unwearying efforts that we are able to-day to claim it as a success, and we deeply regret that our leader and guide has not been spared to see the full fruition of those hopes which, in spite of difficulties, he never failed to entertain. We trusted that we should still, for many years, enjoy that sound and friendly counsel which, from long and wide experience, he was so well qualified to give, and that, before passing from that sphere where his usefulness had been so great, he might see his work crowned by numbers of eager and intelligent students, pursuing their studies in new and perfect school buildings erected under his supervision. It rarely happens, even with the influential man of middle age, that his loss is keenly felt by those outside the circle of his immediate relatives and friends, or that it can be truly said, "his place cannot be filled;" how much more rarely, then, with one approaching the allotted threescore and ten years, by which time most men have withdrawn from the active pursuit of their business or profession, and have retired into the obscurity of private life. Yet we look round in vain for any one to occupy the place of our lamented friend in the management of the Infirmary and School of Medicine—any one who, having the same intimate acquaintance with medical education and medical practice, and the same influential position in the city and country, will yet devote time and energy so ungrudgingly to the important work which he so successfully strove to accomplish. His death imposes, on every one interested in the Infirmary and its medical school, the necessity of renewed and continuous efforts on behalf of the teachers and the taught, that the work commenced and carried on by him may become a fitting memorial, more lasting and of more benefit to the world than sculptured stone or monumental marble.

Gentlemen,—The dark clouds, which for some years have been gathering about the medical profession, threatened, in the last Session of Parliament, to burst over our devoted heads in a torrent of legislation, no fewer than three important measures, aiming at the regulation of the education, examination, and qualification of medical practitioners having been brought forward, and one of these being urged onwards with such impetuous determination as to render it probable that students might find, this present Winter Session, that the conditions of study had greatly and unexpectedly changed from those under which they commenced their curriculum a few short months ago. Thanks chiefly to the "cloud compelling" power of the Scotch members (not less watchful of their country's interests, if less noisy in asserting them than their Irish compeers), the storm was for the time averted, and a few days of grace are thus left us to set our house in order, and to consider whether there is any means by which the warring interests of the licensing bodies here, and in the other divisions of the kingdom, can be brought into something like a peaceful settlement.

Those who are anxious for a change, sketch for us a very apalling picture of nineteen licensing bodies all anxious to obtain as many fees as possible, and all, therefore, engaged in a competition which, we are told, results in the imposing, on a confiding public, of inferior articles at a reduced rate, when only the very best ought to be supplied. In this picture the colours are laid on with unsparing hand (the black especially being liberally dealt with), but the perspective is somewhat faulty; there is great lack of variety in its several parts, and it is conspicuous for the absence of what alone makes any picture valuable—truth. While it may be freely admitted that, with a number of licensing bodies, there must be diversity in the examinations, it must not be forgotten that absolute uniformity is impossible where there are many examiners, and it may even be doubted if the same examiner could possibly give every student an examination of equal difficulty. The argument is only a good one, therefore, when it can be shown that students who are ill prepared, and who have little or no chance at some examining boards, can always manage to scrape through at others; while, if the alleged "competition downwards" as to fees really exists, it ought to be shown by students flocking to where the fees are lowest, so that the licensing bodies charging the higher fees should have a yearly diminishing number of candidates. It is, indeed, asserted that both these statements are in accordance with facts, but a little investigation will convince the unprejudiced that this is not the case. The tradesmen of London have been for some time agitating in opposition to the co-operative stores, because of the competition of these with them; this competition is real and undeniable, and is evidenced by decreased trade and decreased profit on the one side, and increase of both on the other; if there were then this competition which is supposed between medical licensing bodies, it should be evidenced in like manner; but, instead of this being the case, those bodies charging higher fees have a yearly increasing number of candidates, and yearly send out an increased number of medical practitioners. It is not possible, therefore, to base on this ground any sound argument for pulling down the old fabric which has stood so long and done such good service. Nevertheless, some change will be forced upon us before many years are over, even in spite of our own wishes and desires; and in order that the change may not be too radical, and may not lead to the extirpation, root and branch, of some effective and useful institutions, it will be well to endeavour to effect some compromise in order that peace may once more be established, and harmony reign in our midst.

It cannot be denied that in the multiplicity of diplomas and of licensing bodies there is much practical inconvenience both to the public and the profession. The former can never be properly informed as to the relative standing of the different degrees and diplomas, and a highly educated young practitioner not unfrequently gets looked upon as something like an impostor, simply because the letters which follow his name are not familiar to the people among whom he has elected to settle down, or because his qualification is not the same as that of the ignorant old gentleman who has presided over the entrance into the world, and exit from it, of their relations and friends. Through the same ignorance there occur, in the regulations of many hospitals, provincial and otherwise, certain restrictions concerning the eligibility for election to the medical and surgical appointments, the result being that in many instances the rules prevent the election of men having high qualifications, these having to make way for others of inferior education and abilities. Again, the necessity which exists of taking two diplomas from two corporations, by two separate examinations, is an inconvenience as well as an increased expense, which should long have ceased to exist in an age and country boasting its progress. The last objection has already been got rid of in Scotland by the combination of the College of Physicians with the two surgical corporations, but in England and Ireland all attempts at such combination have hitherto failed, and the inconvenience is more keenly felt year by year. The difficulty due to the diversity of diplomas can only be overcome by establishing a diploma or degree which all alike shall be obliged to take as the only portal to practice, so that, possessing this, the practitioner may be considered as legally qualified for any office, and the public may no longer be puzzled to discriminate between M.B., M.C., M.D., L.F.P.S.G., L.R.C.P., and the rest of the numerous initial letters which form so imposing a tail to a doctor's name, but which, to the public generally, are more enigmatical than the A.S.S., which Dr. Pangloss was so proud of. The "one portal system" which has been so much advocated and decried is the only logical way of escape from the admitted defects of our present system, the only means by which we can ensure that the sieves by which students are sifted have meshes of nearly the same width. But, if we admit this, and determine to carry out such a scheme, we find that the difficulties which environ us increase with every step we take; enmities and antagonisms which we fondly hoped had been long buried in the past become suddenly awakened; party spirit, national prejudices, and corporate interests are aroused in all quarters, and amid the Babel of contending tongues it is hard to distinguish any of that "sweet reasonableness" which renders reconciliation possible.

After reading the evidence given before the Select Committee of the House of Commons, we can well understand the difficulty the Committee had in coming to any decision, for on the one hand they were told by Dr. Andrew Wood and Mr. Turner, in many and eloquent words, of the faith those gentlemen had in Pope's adage that "whatever is is right," while on the other, Mr. Ernest Hart and Dr. Glover were not less convincing in their statement of the view that "whatever is is wrong." With such a radical difference of opinion as the necessity of any change whatsoever, how can we expect any concurrence in the details of a scheme involving such great and important changes?

If I could now so work on your imaginations as to lead you to believe that up to this present moment there has been no organisation of medical education and examination, that there are no universities or corporations, no vested interest whatsoever, and, having accomplished this, were then to ask you in what way you would advise that the organisation should be carried on, I presume there is scarcely one person present but would advocate the placing of the education and examination under the control of the State. By this means the best examiners could be obtained at the most moderate cost, the power essential to carrying out regulations as to examination would be brought readily into play, the legal status of those obtaining qualifications would be unquestionable, and, lastly, as near an approach as possible to uniformity would be obtained. But, it is impossible (and would not be desirable if it were possible), to sweep away by one stroke those agencies by means of which the work has been hitherto done,—they must still take an active part in the supervision and control of medical qualification, so that a State qualification, pure and simple, is in the existing condition of affairs absolutely impossible.

In default of what we might consider as theoretically the best method, what can we substitute as second best? Certainly the enforced combination of the existing bodies in each division of the kingdom, the "conjoined scheme" of which we have heard so much. If it be true that this is, under the present conditions, the best measure of reform that can be suggested, how is it that it has met with so much opposition, and that it has been found impossible, hitherto, to get it put into practice? The opposition to the scheme in the recent Session of Parliament was chiefly (as I have already said) that of the Scotch members. Now, it is incontestable that the difficulty which has arisen in Scotland in the formation of a conjoint scheme depends entirely on the position and action of the Universities, and more especially of those which have medical schools in connection with them; so that, in order to understand the question fully, it is necessary to examine the position which these occupy in relation to the English Universities and the Scotch Corporations. It must be freely conceded that the Scotch Universities take a vastly greater share in the education of medical men than do their English sisters, but it must not be forgotten that the degrees of the latter are not taken as qualifications for practice, but are what are termed "higher qualifications." The degrees of the Scotch Universities, on the other hand, do not properly fall under this category, but are for the most part simple qualifications to practise, those who take them taking no other diploma, and they differ very little in their status, therefore, from the qualifications of the several corporations. I am aware that this view will be fiercely combated by many highly esteemed friends and colleagues, but I think that a dispassionate investigation will convince even them that there is much truth in it, and, as the idea that the Universities stand on a different platform to the Corporations, and that their degrees are altogether above the diplomas of the latter, has already been a fruitful source of discord, and threatens now to render nugatory all attempts at reform, I consider it a duty to expose what seems to me a delusive and injurious error, even at the risk of social and professional ostracism. They will remind me that these Universities require classes in certain additional subjects—namely, botany and zoology; it is true, they do indeed require a study of these interesting but useless subjects, but in order to make room for them the study of anatomy, surgery, and medicine is limited to half the period required by the other licensing bodies in Scotland. Remember, I am speaking of the courses *required by the regulations*, and not of those which students may be induced to take by the pressure of the Professors or from other causes; I have no doubt that in the University Schools, as in the extra-mural ones, many students take both additional and optional classes. In what respect, then, can the M.D. be looked upon as a higher *medical* qualification than the Licence of the College of Physicians, seeing an additional course of *the* most important subject, medicine, is required for the latter; or in what respect is the C.M. better than the L.F.P.S., when the latter requires an additional course of surgery,—both the Corporations, moreover, requiring two courses of anatomy and twelve months of practical anatomy, while the Universities only demand one course and six months practical work? A higher medical qualification with less medical knowledge, a higher surgical qualification with less knowledge of surgery;

higher professional qualifications with less knowledge of anatomy! Does not the statement approach to the *reductio ad absurdum* of the logicians? Again, I shall be reminded that for the University degree four examinations are required, for the Corporation licence only two; but I have yet to learn that the ordeal is rendered more difficult by only a few subjects being taken at each examination instead of many; it is notorious that where it is allowable to pass the subjects of the preliminary examinations singly, it is the imperfectly educated or brainless students who avail themselves of this permission, some of them presenting themselves at as many examinations as there are subjects to be examined on.

If the University degrees are not higher than the Corporation diplomas, what difficulty can there be in the Universities and the Corporations combining, and granting their qualifications together, after one examination? To my mind—unbiassed, I believe, by party prejudice, and having nothing but good wishes for those noble institutions which have been the means of training so many heroes of our profession—the chief obstacle lies in the fact that the Scotch Universities are not only licensing but educating bodies, and, complicating the questions, "What is good for the profession?" "What is good for the public?" comes the further question, "What is good for our University Schools?" Those connected with the Universities, with every wish to be fair and public-spirited, must yet be influenced in no small degree by their own interests, and it is but natural that they should anticipate a diminution in the number of those who are now compelled to attend the classes by the regulations for graduation. Natural as this fear is, I am not at all sure that it would be justified by the event, for the name and credit which these schools have so worthily obtained would always attract numbers of students, little if at all short of those which now attend. If a conjoint scheme is ever to become an accomplished fact, the University authorities must dismiss this consideration from their minds, and they may be confident that no evil consequence will ensue.

Short of this combination,—this radical change in our system of qualification,—what improvements in medical polity can be suggested, which are capable of being carried out without any great disturbance of existing arrangements? In the first place, I would plead for a larger measure of freedom in medical education. It is certainly desirable that before a teacher on any subject is recognised by any licensing body he should produce evidence of his capabilities for performing the work well, should show that he has satisfactory class rooms and a fair nucleus of a museum, is able to lecture with some amount of ease and impressiveness, and is master of the science he aspires to teach; but, having satisfied one board, he should be at once acknowledged by all the rest,—it should not be necessary for him to petition every University Court, and every College of Physicians and Surgeons, scarcely one of which is in a position to form an opinion as to his capacity for the work. Further, there should be no limitation to the number of classes which a student can take at one place, for any diploma or degree. The University of Edinburgh discovered many years ago that the competition of extra-mural teachers produced such vigorous teaching, both within and without the University walls, as resulted in students being attracted from all parts of the country, and from distant states and colonies, so that the University classes, instead of falling off, steadily increased, and are to this day still increasing. Unfortunately, that University has not followed out to its logical end this line of conduct, by giving complete freedom to the teaching, and allowing all classes to be taken extra-murally. The fear, to which I have already referred, of the loss of students is at the bottom of this; but if the University lecturers, with all the advantages of endowed chairs, well fitted-up class rooms and laboratories, and the credit belonging to their long roll of distinguished students, cannot compete on even terms with the extra-mural lecturers, there must surely be something radically wrong in their method of teaching.

Another change which I would suggest relates to the General Medical Council. That body has had long and interesting discussions (at a cost of between £300 and £400 a day), on regulations for examinations, has (at great cost) sent visitors to attend the examinations of the various bodies, and has made suggestions to those bodies as to their mode of examining; but, having no power to enforce the carrying out of those suggestions, the time and money thus expended has for the most part been thrown away. One slight example will suffice to emphasize my meaning. The visitors who came to Glasgow having pointed out that one defect in the first professional examination of the Faculty of Physicians and Surgeons was the absence of any recently dissected subject, the Council suggested that this defect should be remedied; and my colleague and myself were instructed to make preparations accordingly; this we did in April, 1877. Since that time I have again and again endeavoured to persuade the Council of the Faculty to carry out the suggestion of the General Medical Council, but in vain, and at present the preparation made two and a half years ago represents the Faculty's notion of a recently dissected subject. The General Medical Council should have conferred on it sufficient power to get its laws put into force, or it should cease to stultify itself by issuing recommendations, since these are generally disregarded.

But even with the existing conditions of medical education and qualification it is possible to make improvements, small in themselves, but all tending to make the newly fledged practitioner more fully equipped, and, therefore, to ensure for him more fully the confidence of the general public. These relate to education, preliminary and professional, and to examination in all its forms; with these I shall occupy your attention for a short time.

Notwithstanding all the improvement in preliminary education which has been effected since the passing of the Medical Act of 1858 (improvement so great as to lead Mr. Syme to say in 1868, "I think as far as the preliminary education of medical men is concerned we may be considered to have done all we can"*), students still present themselves for the preliminary examination with lamentably inadequate knowledge of even the more important subjects, such as Latin and English. I have it on good authority that, taking one subject with another, not more than half the candidates pass, the majority failing in Latin, but a very large number being defective in English. Some curious examples of the answers given in the English papers have been furnished to me, many of them reading like extracts from one of the comic journals. Thus, one ingenious student defines "binocular vision" as "second sight;" another speaks of "vivisection" as being "buried alive;" and a third, evidently deeply versed in Roman history, has discovered that the "letters of Junius" were written by "Cicero Africanus, who stabbed Cæsar;" then a "blue book" is said to be "a nasty, dirty book;" and the "Bard of Avon" is "Janet Hamilton, who lived in Avondale;" and "cremation" is "vivisection."

No doubt, as the general education of the country rises, that of our medical students must rise with it; but it is much to be regretted that, while such great efforts have been made in recent years on behalf of primary education, so little has been done for secondary and higher education, and especially the former. Unless something is done in this direction the time will come when the lower classes will be better educated than the middle, and when our artisans and labourers will have a more reliable educational foundation than our doctors.

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* *Memorials of the Life of James Syme*, p. 183.

The time at my disposal is too brief to admit of my discussing the details of professional education; a few thoughts, however, which have been fermenting in my brain for some years past, may prove useful to you and to others, and these I shall submit as briefly as possible.

Nearly ten years' experience as a teacher has convinced me of the high value of two particular methods of instruction—namely, the *demonstrative* and the *tutorial.* The former is not equally applicable to all departments of medical education; it can be more thoroughly carried out in the earlier courses, such as anatomy and chemistry; physiology has, in recent years, been brought in some measure within its scope. Materia medica and pathology are capable of being taught, to a large extent, in this way, while even forensic medicine is not entirely beyond its range. Medicine and surgery can only be taught demonstratively in the wards, true clinical teaching furnishing the oldest and best example of this form of education, as it has also, of all forms of medical study, furnished the most useful results to the medical profession and the public.

Nothing is more likely to result in a thorough, deep, and abiding knowledge of any subject than a wholesome mistrust of the treatises written on it. My invariable advice to students commencing the study of practical anatomy is, "Don't believe a word that the books tell you, unless you are able to substantiate the truth of it by your own investigation on the dissected subject or in preparations." I encourage them to entertain a like mistrust of statements made in my lectures, and endeavour always to make good my words by showing everything of which I speak in the form most likely to impress on their minds the salient and important features. If a lecturer simply sits or stands behind a table, and recites, to a sleepy and inattentive audience, the course, relations, and branches of a particular artery, the position and structure of a certain gland, or the relative position of parts in that most complicated of all organs—the brain—he dissipates his own energy without reasonable return, and wastes the time of his auditors, who would be much better employed in reading the same description from their books at home; for, in the latter case, they would have the advantage of being able to dwell especially on that portion which presented especial difficulties to their minds—

this being seldom exactly the same in any two students. The difference between such a description and a demonstration of the part described is as great as between reading a description of some lovely scene—where all the skill of the word painter is put forth in vain, since it fails in giving to your mind anything like a distinct and abiding impression—and standing on an eminence but for one moment, looking with your own eyes on the same scene, when all the beauties of flood and field, of mountain and of plain, the gorgeous tints of the setting sun, and the varied hues of forest and of field are fixed indelibly and in vivid colours on your mind. The hearer, in listening to description without demonstration, feels that while the sentences follow the proper rules of grammar, and so far are intelligible, they lack that life which alone can give him direct interest in them; but, when the object spoken of is placed before him, not only his ears but his eyes may become instructed and informed; words and sentences, which before sounded like those of some foreign tongue, assume meaning and value; his languishing or sleeping interest becomes aroused, and he feels that he can not only hear and understand, but can also carry away in his memory a large portion of what has been described. Do not suppose that it is my wish to do away with lectures (such has been the aim of certain ardent medical reformers); my ambition is less wide and less dangerous. I only wish to make all lectures, as far as possible, partake of the nature of demonstrations, that the eyes of our students may be educated for the great work they have in after years to perform; and that the students themselves may be taught in the most impressive and successful manner.

The *tutorial* mode of teaching is so general in all the classes that there is less need to occupy your time with a discussion of its merits; a further extension of its use, with some modification of the conditions under which it is used is all that is now needed. Simple class examinations, held once or twice a month, are not sufficient (especially if students are allowed to absent themselves at will) to benefit those really requiring tutorial help, namely the lazy, the careless, the stupid, and the "fast." After such undesirable members of our schools have made several attempts to pass the examinations they generally resort to "grinders," "coaches," "tutors," or by whatever other name you like to distinguish those overworked and underpaid "fags" of education; and after a few months with them manage generally to get through the dread ordeal. How is this accomplished? Not, as some imagine, by these tutors "eagerly scanning examination papers of former years, and mysteriously finding out the peculiarities of the examiners under whose hands their pupils are doomed to pass," and who "spend their lives in discovering which pages of a text book a man ought to read, and which will not be likely to pay,"* but by laboriously and painfully going over every inch of ground with the student, making him read, study, and understand, and daily examining him on the same subjects, and much in the same manner as at the professional examinations for which the candidate is preparing. In many of the English medical schools, tutors are employed by the lecturers to take the pupils in hand, and go over all the ground occupied by the lectures; but as the medical tutor can never be so well acquainted with the subjects as the lecturers themselves (unless a man of superhuman knowledge and intelligence), it would be a far more satisfactory mode of teaching if the teachers were to carry out the work themselves, each in his own particular department; and that is what I am anxious to see effected. The tutorial classes should be held *at least* once a week, but should be independent of the examinations for class honours, as most of the feeble-kneed and ready-to-halt are afraid of anything resembling a competitive examination, and would rather not attempt climbing at all than climb and fall. Attendance should be compulsory.

These suggestions as to improvements in our mode of education are not made with any hope that weak and worthless students may thereby be smuggled through the testing process they have to undergo. Every one who has the interests of the profession at heart must grieve when anything of that nature takes place. But if such men are to become qualified to practise, it will be at least some mitigation of the evil, if they are as well stocked with knowledge, as well equipped for the battle of life as it is possible to make them, especially if we can ensure that their knowledge is not a mere superficial varnish put on for a period to impose on the inquisitors who have to pass judgment on them.

The most irksome and unsatisfactory study of the whole curriculum is that of chemistry. The subject has in recent years become so vast and so difficult that most of the licensing bodies have found it necessary to limit the scope of the examination, in the hope that thereby the labour of the student might be lightened; this hope has, unfortunately, been only partly realised, for the chemistry class includes besides medical students others who wish to become experimental, analytical, or manufacturing chemists, on whose behalf, therefore, it is necessary to take up many subjects, and describe many processes scarcely so useful to a medical man as a knowledge of Sanscrit or Arabic. The study of an exact science such as chemistry must be interesting to an intelligent youth whose attention is not otherwise occupied, but to a medical student, whose whole energies are sufficiently taxed by the strictly professional subjects, the study is at best but a half-hearted struggle with difficulties which he meets only because he cannot avoid them. Still, it is not possible to dispense with chemistry entirely, for some parts of physiology, materia medica, pathology, and even of practice of medicine, require an acquaintance with its principles and some of its processes. The difficulty can be only partly overcome by making chemistry one of the subjects of the preliminary examination, as is done by the College of Surgeons of England, for only the elements of the science can be thus treated. The chemistry of the secretions and excretions, of blood, water, urinary calculi, the chief poisons, &c., must always furnish material for a later course. Elementary chemistry may be made a preliminary subject, and the professional course may be one of purely medical chemistry (including the present practical class); but I am not very confident as to the successful working of this arrangement, for, unfortunately, medical chemistry requires an acquaintance with many of the other branches of the science; and it is to be feared that the elementary knowledge of the students would be insufficient to enable them to understand the later course. All compromises are said to be unsatisfactory, and this is certainly not exempt from that charge; still, I think it would be better than the present system, under which few students know anything either of elementary or medical chemistry.

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* Professor P. G. Tait, "Artificial Selection." *Macmillan's Magazine*, Vol. xxv, p. 416.

The wise king of ancient days felt he had discovered a grievance when he observed that "of making many books there is no end," but this was presumably a small evil in his day to what it has become in our own, when every budding surgeon, and every would-be professor, considers it incumbent on him to lay before the public his peculiar views on the subject which it is his province to teach. This may seem a small but it is a very real evil and obstruction to the earnest and industrious student, who, if his circumstances admit of it, accumulates around him a number of books, compares the opinions of this and that author, weighs their theories, and endeavours to estimate the value of their facts, and finds to his dismay that what is accepted as convincing evidence or established fact by one author is regarded by another as fanciful theory, supported by no evidence, and "is referred to only that the student may be warned against it as an error."

A still greater evil exists in the rapidly increasing number of classes, and the subdivision of each subject into a variety of sections. That tendency to specialism which has been so much discussed in recent years, and so much reprobated, is to be found not only in relation to practical, but also to theoretical subjects, so that within the last twenty-five years the number of courses of lectures in each of the schools of medicine has more than doubled. A quarter of a century ago anatomy and physiology formed one course in many of the schools, now, each is subdivided into two; to surgery we have operative surgery added; to chemistry, practical chemistry; to midwifery, a course on diseases of women; to medical jurisprudence, a special laboratory course of testing for poisons; to materia medica, a summer course of practical pharmacy; to medicine, special lectures on auscultation and percussion; while latterly there have sprung up practical botany and practical zoology; and we are even threatened in the future with medical physics and pathological chemistry as subjects for separate courses. Nor does the list finish here, for have we not also special courses on diseases of the eye, diseases of the ear, diseases of the skin, diseases of the throat, and even diseases of the chest, as well as courses of instruction in vaccination and in venereal diseases? Most of these are, no doubt, called optional subjects; but, as the lecturers decline to take them up in the ordinary compulsory courses, the already over-weighted and distressed student is compelled—if he would not remain totally ignorant of important branches of study—either to take these classes or trust to the information he can obtain by reading his text books. Moreover, every few years one or more of these subjects gets transferred from the optional to the compulsory list; but, although the latter is thus increased in length, the former gets no less, for, as it was with the fabled hydra, so here, for every head lopped off at least two spring up in its place.

It is quite impossible for students, even those most highly endowed intellectually, with the limited time at their disposal, to do justice to the long list of subjects they are invited to study; indeed, if we may judge from the results of the professional examinations, it would seem that the more contracted field of compulsory subjects is too extensive for their energies, as so many are unable to make anything like a creditable appearance before very considerate and lenient examiners.

You will gather from what I have said on this head that I am not favourable to a further increase of the compulsory classes, and, although an ophthalmologist and a lecturer on the science, I by no means sympathise with those who signed the memorial recently presented to the General Medical Council, praying that a course of lectures on diseases of the eye should be included in the curriculum. If any extension of the course of study should in future years be found desirable, it will be necessary to further extend the period over which professional study is spread, and to make five years (instead of four) the minimum period in which a qualification can be obtained. This would considerably increase the cost of professional study, and would tend to exclude a very useful and reliable class of men from entering the profession—namely, those who raise themselves by their unaided exertions. These are in all trades and professions the most enterprising and energetic of their class, they tend constantly to introduce new vigour into old methods, and to throw new light on old problems; if some of them lack that refinement which comes of higher preliminary education, and that indescribable "tone" which it is believed only a university education can confer, they are usually well endowed with that heroic enthusiasm which has carried many a doctor through the self-abnegation and the risk of distant battle field, or scarcely less dangerous epidemic of typhus or cholera at home.

Instead of this extension of the period of study, instead of this constant multiplication of the classes, I would plead for further condensation, and even the abolition of one or two of those courses which have found their way into the curriculum. Many of the additional subjects which have recently sprung up belong either to the course on surgery or that on practice of medicine, and I would appeal to the lecturers on those subjects whether it is not possible, by excluding portions of their subject, which are of little practical importance, by giving an occasional extra lecture or practical demonstration, or by extending the winter session for another week or so, to overtake the more important parts of those outlying subjects which have been separated, and made to furnish material for special courses. Doubtless they may claim some assistance in the arduous but honourable task they have to perform; and I am glad to know that here in Glasgow that assistance can be easily obtained, as every year there settle in our city prizemen and scholars of the several schools who would be glad of the opportunity of spending a little longer time in connection with the classes, and of devoting a few hours a day to scientific work, or would even take much of the most irksome and yet most necessary branch of the teacher's labour—I refer to the tutorial work—off his hands. Another means of getting over the difficulty of saying all that should be said, and teaching all that should be taught in the limited period at the disposal of the lecturer, lies in taking advantage to the full of the opportunities afforded in connection with cases under treatment in the wards. There are many diseases so constantly represented in the wards, and which lend themselves so readily to the demonstrative form of teaching (the true clinical method) that they might be excluded altogether from the systematic course of lectures, or alluded to only in their relation to other diseases of a similar kind; in many instances such affections are not only described in their proper place in the wards, once and again as instances of the kind present themselves, but form the subject of long and elaborate disquisitions in the more formal course; such reiteration may, no doubt, be a benefit, especially to the dull-witted or indolent student, but it necessitates the exclusion of other matter which may be of equal or even superior importance.

Much has been said, and much written on the subject of our professional examinations, and the fact that our method of "artificial selection" (as Professor Tait calls it) has been thus canvassed, implies that it is not considered to be altogether satisfactory.

If it were possible to place absolute dependence on the decision of the teachers—if there were no chance of their being influenced by considerations of friendship or antipathy, and if their estimate of the qualifications of students were not liable to be complicated by questions of credit to their school and pecuniary profit and loss, there is no doubt that they would be better able, from their fuller and more perfect knowledge of the students, to judge of their merit and ability, than the most skilled examiners under the most perfect examination system. It may be doubted, however, if, even in the perfect Utopian system dreamed of by Sir Thomas More, such an arrangement would be possible, and certainly in our own day, when the lament of the Apostle, that "all seek their own," comes yearly to have increased significance and truth, it is not to be thought of; we must therefore content ourselves with improving as far as possible the imperfect method we possess.

The first essential to a satisfactory professional examination is to have competent examiners, and this, apparently so easy a matter, is really one of great difficulty. Professor Tait says

—"A really good examiner is perhaps the rarest product of civilisation," and he adds—"In an unusually large experience, extending to each of the three kingdoms, I have met but two, and I see clearly how each, even of these, might be greatly improved." He is speaking in reference to mathematical and physical science, but he asserts that medical examiners are even more faulty; and, while we are unwilling to admit that there are not more than two good medical examiners, we cannot deny that their number is small, and cannot escape the conclusion that many students with a very imperfect knowledge of the subjects of the examination pass, simply because the knowledge of the examiners is nearly as imperfect as their own. In the more strictly scientific or theoretical subjects the examiner should be actually engaged in teaching the subject he examines on—as Professor Tait says, "No one who is not actually engaged in teaching, or at least working at a subject, can have accurate information as to its development, or that practical knowledge which is essential to an examiner." An exception might perhaps be made in relation to the practical subjects, but even in these the teacher must be best acquainted with the current views on certain not very definitely settled points, and must be most familiar with the whole range of his subject. A not unreasonable objection has been taken to teachers as examiners—that they are likely to be biassed by their previous knowledge of those who have been under their teaching, and are liable, therefore, to pass judgment, not on the proficiency shown at the examination board, but on the whole conduct of the student while under their observation. This wider knowledge of the student, it may with equal reason be replied, should lead to a more unerring judgment as to his knowlege and capabilities; but, in order to avoid even the "slightest appearance of evil," in order to do away with any suspicion of pre-judgment, it would be well that teachers should not be the only examiners of those who have attended their classes.

An examiner, besides possessing the widest and most thorough knowledge of his subject, and much practical experience of the different methods in which it is taught, should be endowed with such suavity of manner, and such gentleness, as should set the candidate at his ease, and place him in the best condition for displaying what knowledge he is possessed of. A sneering, sarcastic, or bullying manner in the examiner is a fruitful cause of failure among the candidates, but while it is "sport" to the one, it involves "social degradation and loss of self-confidence" to the other. The examiner's duty plainly is to ascertain the extent of a candidate's knowledge, not to sound the depths of his ignorance; if, therefore, he finds a blank spot in the student's memory, he should not hover round it like a moth around a gas flame, till he plunges the poor unfortunate into deepest despair, and brings on an acute attack of nervousness, but should pass on to other branches of the subject, so as to ascertain what solid groundwork of knowledge actually exists. "Catch questions," and all such as have but a very slender connective thread for memory to hold by should be scrupulously avoided, because they are no real test of the student's knowledge, and are the very questions, the answers to which are carefully committed to memory by weak and lazy students, while their more distinguished and industrious fellows are commonly oblivious of them. Indeed, it would not be too much to say that if a student was too evidently conscious that *Salasap* represented the branches of the axillary artery, or was impressed with the notion that "Timothy does vex all nervous people," he might at once be asked the origin and insertion of the biceps cruris with the certainty that he would not know it. By the promptitude of the answer to a catch question, we might predicate ignorance rather than knowledge of the subject.

I have already called attention to what I consider faulty in the method of teaching chemistry, and I have now a word to say as to the examination on that subject. If there is any one subject of the medical curriculum which demands accurate and wide knowledge of the subject on the part of the examiner, chemistry is surely that one; yet the medical corporations are content to have, as examiners, gentlemen who have been in practice many years, and who, if they are acquainted with chemistry at all, know it only as it was, not as it is. Those gentlemen deserve credit for the manner in which they perform what cannot be to them very congenial work, and I have little doubt that they would be willing to yield place to skilled chemists, who would be able to bridge over that wide gulf which now separates chemistry as it is taught, from chemistry as it forms part of the examination. The corporations have the power of remedying this in their own hands. They are not obliged to elect members of their own body in this particular subject. This solitary exception to the rule which keeps the examinerships in their own hands, was evidently inserted in order that the defect I have pointed out might be remedied, yet years pass by without the change being effected, and the complaints of students become yearly more audible.

Many examples of the defects of the present examination might be adduced, but as any description of my own might be considered to have a personal bearing, I will give you a scene as sketched by Professor Tait, from whose paper I have several times had occasion to quote:—

" *Medical Examiner* (*aside to his colleague*). This seems a good man; I shall ask him a few difficult questions. *Colleague* (*aside*).—All right! *Ex.*—What is caloric? *Cand.*—I don't quite understand. *Ex.*—If you mix alcohol and water, what is produced? *Cand.* (hesitatingly)—Do you mean grog? *Ex.*—I mean does it become hotter or colder? *Cand.*—I think it becomes hotter. *Ex.*—Why? *Cand.*—I am afraid I have misunderstood you, sir. *Ex.*—Does the mixture contract? *Cand.* (in despair)—Yes. *Ex.*—Yes, quite right. I see you understand it." Or again, as follows:—" *Ex.*—If you wish to boil a kettle (!), would you put it under or above the fire? *Cand.* is speechless, because astounded. *Ex.*—What! Don't you know that heat ascends?"

In this scene the questions are really very simple, and are rendered difficult only by the absurd way in which they are put, and by the fact that the examination differs so widely from the style of teaching at the present day.

Improved general and professional education, and a more perfect system of granting degrees and diplomas must improve the standing of the profession, insuring, as they will, that those only shall enter it who are well qualified to undertake the responsible duties involved; but I am far from contending that this training is the sole, or even the most important, factor in the complicated question as to how medical men are to become more held in esteem, and more highly valued by the world at large. That I have particularly dwelt on this aspect of the question is entirely due to my position as a teacher and examiner, which has led me to pay special attention to educational defects, and the means by which they may be remedied; but I am not ignorant that more depends on the conduct of the medical practitioner after than before he obtains his qualification.

The respect in which any man is held depends on his integrity and virtue. With the practitioner of medicine another important factor comes into play—namely, the ability he displays in the practice of the art of healing; the latter will depend much upon the training he has received at schools and hospitals; but the former must have a deeper foundation in the innermost recesses of a man's being, and a groundwork of religious conviction and belief which, if especially required of one having the "cure of souls," is also necessary for one who would take the highest place as a healer of wounded or suffering humanity.

We often hear regret expressed that the medical is less highly regarded than the clerical or legal profession, and, at a superficial glance, there appears to be some ground for this complaint; but I venture to think that the respect yielded to the clergy as a duty, and to the lawyers from fear of a power not always used for the best ends, is, in regard to medical men, the more genuine result of a recognition of kindly and valuable services, rendered with risk to life, and often without hope of pecuniary reward. That this respect must be diminished by the criminal or immoral conduct of members of the profession it would be idle to deny; and it is painful to every one of us when one belonging to the same brotherhood as ourselves is brought to the bar of public justice charged with infringing those laws which it should be his pride and privilege to uphold; but we should feel the disgrace more keenly if these were not exceptional instances, which only stand out more prominently, and are commented on more freely, because of the high position taken by the profession, just as black spots are more strikingly evident on a white ground.

No preliminary weeding out can be successful in excluding such undesirable members from our society, for, so surely as cloud and sunshine, and light and darkness must exist in nature, so certainly must bad and good form constituents of all associations and combinations of men. It is not by the acts of such, however, that the profession as a whole is likely to decline from that high position it deserves to occupy, but rather by a general disregard of what may be termed the "minor moralities," leading to acts which, while perfectly legal in themselves, are yet such as to give to the world a poor opinion of our enthusiasm for our profession and our honesty. Thus, when men use their profession purely as a means of obtaining wealth, and think no means which is within the pale of the law too low to use for the attainment of their ends; when they are ready to impose on the credulity of their patients, or extract gain from their fears; or when they take a purely commercial view of their profession, and regard those under their charge only as a means of yielding additions to their accumulating store, the evil effect of such conduct is not limited to individuals, but spreads to the whole class, and the cynical world is only too ready to credit the whole profession with those mean qualities which belong only to the few. Quackery, whether it be practised by the qualified or the unqualified, is nothing else than this disregard of everything connected with the profession but the possibility of making money. The unqualified quack is no doubt dangerous to health and life, and is often brought by his combined ignorance and self-assurance within range of the law; but the qualified quack does more real injury to the profession to which he belongs. He practises, often with startling and wonderful success, without any fear of prosecutions or actions for malpraxis; may even be highly respected by the patients under his charge, becomes perhaps a deacon or churchwarden, and, having grown portly with his wealth, flourishes as alderman or bailie; but the higher he rises, the more pernicious is his example on the younger members of the profession, the more serious is the fall in the estimation of the thoughtful and intelligent among the educated classes, which the profession as a whole suffers.

The sage of Chelsea, writing many years ago, and speaking with the curious enthusiasm, and yet the marked melancholy, which distinguish all his utterances, says:—

"Medicine, guarded, too, by preliminary impediments and frightful Medusa-heads of quackery, which deter many generous souls from entering, is of the *half*-articulate professions, and does not much invite the ardent kinds of ambition. The intellect required for medicine might be purely human, and, indeed, should by all rules be; the profession of the Human Healer being radically a sacred one, and connected with the highest priesthoods, or rather being itself the outcome and acme of all priesthoods, and divinest conquests of intellect here below, as will appear one day, when men take off their old monastic and ecclesiastical spectacles, and look with eyes again! In essence, the physician's task is always heroic, eminently human; but in practice, most unluckily at present, we find it to become in good part *beaverish*, yielding a money result alone. And what of it is not beaverish? Does it not, too, go mainly to ingenious talking, publishing of yourself, ingratiating of yourself, a partly human exercise or waste of intellect, and, alas, a partly vulpine ditto; making the once sacred Ἰατρός, or Human Healer more impossible for us than ever." (Carlyle, *Latter Day Pamphlets*, p. 160.)

REPORT OF THE AURAL WORK DONE IN THE GLASGOW ROYAL INFIRMARY, DURING A PERIOD OF TWO YEARS—VIZ., FROM NOVEMBER 1st, 1877, TO NOVEMBER 7th, 1879.

By JAMES PATTERSON CASSELLS, M.D., M.R.C.S., Lond.,

Surgeon to the Glasgow Dispensary for Diseases of the Ear; late Aural Surgeon to the Glasgow Royal Infirmary, and Lecturer on Aural Surgery in the Royal Infirmary School of Medicine, Glasgow; Membre-Correspondant de la Société Royale des Sciences Médicales et Naturelles de Bruxelles, &c., &c.

The Ear Department of the Glasgow Royal Infirmary was organised by myself from the first, even to the designing of some of the instruments from original models of my own. Beginning with five patients on November 1st, 1877, onwards to November 7th of this year, 1,037 new patients have been admitted into the Hospital and Dispensary under my care in that period. These patients made 1,752 revisits; counting revisits as patients, as most hospitals do, we have a total of 2,789 persons in the space of two years visiting at the hospital with ear disease alone. Each individual case of this number was examined, diagnosed, prescribed for, and treated by my own hands for the most part: further, all the clinical records of these cases were written by myself. Unfortunately 546 of these records have unaccountably gone amissing in the hospital. There remains in my possession, however, a sufficient number of them (491), to justify me in contributing a series of original and practical papers to the pages of this *Journal*, which papers, I hope, may not lack in interest on account of this mishap.

Of these new patients there were—

34 under three years of age.
65 „ five and over three years of age.
402 „ twenty-one and over five years of age.
498 „ sixty and over twenty-one years of age.
38 over sixty.

Age of youngest patient, 4 months.
Age of oldest patient, - 78 years.

Number of deaths, - - - - - -	3
Number of dismissals incurable (not treated), -	4
Number of dismissals uncured (after treatment),	3
Number of cured, - - - - - -	230

The four last mentioned items require some explanation. The records of 546 patients having been lost, the number of deaths and dismissals has reference alone to the 491 cases of which the records are preserved.

Number of patients permanently improved, 251. Total number of which records have been preserved, 491.

These cases were made up of the following diseases:—

External Ear.

Auricle,	Malformations.
	Eczema, acute and chronic.
	Ulcerations.
	Abscesses.
	Othæmatoma.
Meatus Ext.,	Malformations.
	Foreign bodies.
	Ceruminal accumulations.
	Ulceration and caries.
	Tumours.
	Otitis externa, acute and chronic.
	Hæmorrhage (simulated).
	Cholesteatoma.
Membrana Tympani,	Traumatic Injuries.
	Ulcerations.
	Perforations.
	Calcareous degeneration.

Middle Ear.

Tympanum,	Mucotympanitis, acute and chronic.
	Hydrops tympani.
	Simple mucous catarrh, acute and chronic.
	Exanthemal catarrh, acute and chronic.
	(*a.*) Scarlatinal.
	(*b.*) Rubeolar.
	Syphilitic catarrh.
	(*a.*) Hereditary.
	(*b.*) Acquired, acute and chronic.
	Malarial catarrh, acute and chronic.
	Otitis periodica.
Mastoid,	Mastoid periostitis.
	Mastoiditis.
	Mastoid caries and necrosis.
	Caries of antrum mastoideum.
	Phantom tumour of mastoid.
Eust. Tube,	Eustachian catarrh, acute and chronic.
Naso-Pharynx.	Nasopharyngeal catarrh, acute and chronic.
	Adenoid pharyngitis.
	Defects in palate.
	Malformations of nasal passages.
	Ulcerations of nasal passages.
	Simple ozœna.
	Syphilitic ozœna.
	Polypus of nasal passages.

Internal Ear.

Concussion of labyrinth.
Simple and acute congestion of labyrinth.
Syphilitic acute congestion of labyrinth.
Ménière's disease.

CASES NOT CLASSED.

Deaf mutism from scarlet fever.
Deaf mutism from general infantile paralysis.
Tinnitus from extra-aural causes.
Earache from dental caries.
Labyrinthine vertigo from gastric irritation.

THE ANOMALIES OF HEARING WERE—

Hearing better in a noise.
Overhearing (or hyper-acusis of Itard).
Ticking sound in ear.
Hearing of voices (speaking and singing).
Hearing better in the morning.
Hearing one voice well, and mixed conversation badly.

THE CAUSES OF THESE DISEASES, EITHER ALLEGED OR ASCERTAINED, WERE—

Typhus, enteric, and relapsing fevers, variola, and varicella, scarlatina and rubeola, malaria, syphilis, sea bathing and wetting of the hair of the head, the "snuffles" (or nasal catarrh of infants), mouth-breathing, cold in general, bronchitis, pertussis and teething, falls and blows on the head and ear, phthisis, cleft-palate, adenoid vegetations and tumours in the nasopharynx, nasal polypus, &c.

The class of patients who came for my services at the "Royal" were the very poor alone, mostly out of work, generally in a state of semi-starvation, and ill clad, to whom a good meal of food would have been more acceptable, as well as more beneficial to their diseases, than ear drops. A tablespoonful of cod oil and syrup of the phosphates thrice a day was a Godsend to them, especially as it was got freely, and without cost, in the Infirmary Dispensary. Often have I wished, in the cold, dark nights of last winter—1878-79—that I had had at my disposal, on the same terms, bowls of good hot soup to give my patients, rather than bottles of medicine (*verb. sap.*)

The ear diseases of these poor creatures presented a striking uniformity, most of them being very chronic in character, and very severe, and even dangerous, such as is almost never witnessed in private practice. In striking contrast, also, with private practice, there were very few acute cases. Of acute cases of tympanic disease, indeed, there were a few, and these chiefly in the persons of infants and young children. No case of exostosis nor of hyperostosis of the external meatus was met with, nor was even a case of fungous ear disease (aspergillus) seen in the whole number of patients. There were many cases of polypus, simple and malignant, and as a sequel, many cases of caries of the bony parts of the organ of hearing. There were no cases of frost bite of the auricle met with, which I have often seen in better fed persons, and in milder winters.

Clinical Teaching.

The attendance of students, on my teaching in the Dispensary, was unusually good all along; but my efforts in this direction were hampered by difficulties which effectually hindered me from doing justice to my pupils and to myself, if not also to my patients. In the Winter Session of 1877-78, I had 13 pupils, and in the Session of 1878-79, 17 pupils, all senior students, attending my demonstrations.

(*To be Continued.*)

REVIEWS.

Ocular Therapeutics. By L. de Wecker. Translated and Edited by Litton Forbes, M.A., M.D., F.R.G.S. London: Smith, Elder & Co. 1879.

The *Therapeutique Oculaire* of De Wecker, the translation of which we are about to notice, was in the first instance a course of lectures addressed to the students and practitioners attending his clinique. The lectures, reported verbatim by his assistant, Dr. Masselon, and revised by the author, were published with the view of diffusing more widely amongst the profession the therapeutic resources of modern ophthalmic medicine. The reputation of De Wecker as an oculist, and his acknowledged ability as a writer and original observer in all departments of ophthalmic medicine and surgery, qualify him in an eminent degree for the task he has undertaken, from the specialist's point of view at least. The favourable reception which these lectures have met with in France, and the fact that, within a year of their publication, four translations into four different languages have been undertaken, are sufficient evidence of the high estimation in which the work is held by those who are most competent to judge of its merits. In the form of lectures greater scope is afforded for the exposition of general principles on which to base a rational treatment than is admissable in more systematic treatises. But in a delicate and exceptionally complicated structure like the eye, subject to a great variety of diseases, and burdened with a cumbrous and fluctuating nomenclature, general principles are apt to be lost sight of in the mass of details. Moreover, the specialist accustomed to examine minutely, and watch closely the local manifestations of disease, and the results of local applications, comes by long practice almost intuitively to recognise the essential features of a given case and adapt his remedies to its requirements. This applies with special force to the case of the eye, the whole of the structures of which can be brought within the range of direct vision. Besides, the greater number of cases of disease are due to affections of the conjunctiva. On account of the peculiar disposition of the different parts of this membrane, special attention must be given to the mechanical and functional conditions which may aggravate or prolong indefinitely a disease which in other mucous membranes would require no special treatment whatever.

The general practitioner, on the other hand, accustomed to deal with the body as a whole, and to regard its diseases, whether constitutional or local, as the result and evidence of some derangement of the system which can only be combatted successfully by constitutional measures, and generally lacking that kind of knowledge and experience which can only be got by a lengthened sojourn in a special hospital, naturally gives the preference to constitutional remedies.

Again, the number and delicacy of the structures in the eye and its appendages render it very difficult to distinguish in a group of symptoms those which are essential from those provoked by the secondary affection of the adjoining parts. This is more particularly the case with the inflammatory affections, because of the anatomical, nutritive, and functional relations of the different membranes which so frequently lead to a rapid propagation of the disease to the neighbouring parts, that an attentive study of the local symptoms is absolutely necessary in order to arrive at a correct diagnosis. And this, for reasons already given, is exactly where the general practitioner is most likely to fail. It becomes absolutely necessary then, in a work addressed to the profession generally, that the characteristic features of those forms of disease usually met with should be sketched in broad, but firm outlines, and all unnecessary refinements in diagnosis and classification carefully avoided, otherwise the belief is certain to be generated that they are so many morbid entities, having each its specific remedy, rather than variations or modifications of one and the same morbid process, which is most easily combatted by a judicious combination of local and general treatment.

The lectures cover nearly the whole field of ophthalmic medicine, including those diseases whose treatment is exclusively surgical, as well as those which, in their course, may require surgical interference; the object of the author being not merely to popularise those parts which come more immediately within the sphere of the general practitioner, but also to enable the latter to decide in urgent cases, when an operation may be necessary; because, as he naïvely remarks, it will redound more to the credit of the family physician if he not only recognises the necessity of operative interference, but also "*a faire un choix eclairé de l'operateur.*"*

Passing over the first eight lectures, devoted to the tegumentary diseases of the eyelids, we come to the ophthalmias. Of these, the purulent forms are the most important, for, as the author remarks, "purulent ophthalmia is an affection which the general practitioner is quite as likely to be called on to treat as the specialist. In the majority of cases it is due to infection, which breaks forth with such intensity that the most critical period for treatment has passed away before the family doctor can obtain special advice. It is necessary, therefore, to attend carefully to the signs which tell you that you are no longer in the presence of a mild conjunctival catarrh, but rather of an inflammation of the mucous membrane, requiring extremely watchful treatment."

This applies, with peculiar force, to ophthalmia neonatorum, a disease occurring between the third and fifth days after birth, and, therefore, at its most critical period necessarily under the care of the family physician. Beginning with symptoms of a simple catarrh, it speedily develops into a profuse blennorrhœa, too frequently ending in complete destruction of the eye within a week of the access of the disease. As regards the cause of this ophthalmia, he says:—"There is one point which I must here lay stress upon, and that is, that, in the production of ophthalmia neonatorum, there can be no doubt that inoculation plays the sole part. The infant may be inoculated in the vagina, or at the moment of first washing. If some infants are not attacked with purulent ophthalmia—for their mothers, one and all, expose them to the risk of it—it is because the infant instinctively curls its eyelids inwards. It is only in cases where an infant's eyes are prematurely opened that they contract contagion. The probability of inoculation is further increased by the fact that many of these infants live amid surroundings where infectious matter abounds."

From whatever cause it may originate, the importance of keeping the parts perfectly clean with tepid water, medicated lotions, &c., cannot be too strongly insisted on; for by these means alone the eye can be carried safely through the critical stage of the disease, if the health of the little patient does not in the meantime give way. De Wecker recommends "ice cold compresses, prepared with water slightly carbolised (1 part in 200), and applied hourly for from five to twenty minutes;" . . . "cold disinfectants, and cauterisations, with a solution of nitrate of silver (1 in 50), ought to cure every ophthalmia in new born infants." This is certainly true, with the reservation just made; for occasionally, during the progress of a case which seems to promise well, symptoms of gastric irritation and marasmus make their appearance, the cornea, a structure of low vitality, suddenly becomes steamy, sloughs, and gives way, the case too frequently ending in collapse of the eyeball.

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* See introduction to the original.

The eruptive affections of the conjunctiva—phlyctenular and pustular ophthalmia—corresponding very nearly with the vesicle and papule of the skin, have a third variety added—the miliary. There is also a form of phlyctenular ophthalmia described as vernal catarrh. The older classification is sufficiently comprehensive; for the pustule and phlycten, including phlyctenular corneitis, are to be regarded as modifications of one and the same pathological process, due, in a great measure, to modifications of the conjunctiva and the structures it overlies, and, to some extent, to the constitution of the patient. The exciting causes of the disease he holds to be feeble power of cuticular resistance, a vitiated atmosphere, want of cleanliness as regards the eyes, and defective nutrition; and says that, "starting from these premises, it will be conceded that in such cases, more if possible than elsewhere, the medical attendant must vigilantly look after the general hygiene. Living in pure air, sponging the body with salt water on rising, to be followed by rubbing with flannel and good shampooing, together with nourishing food and preparations of arsenic or iron, should be strongly insisted on."

"As regards the direct treatment, except when, as in the malignant forms of pustular conjunctivitis, some grave corneal mischief exists, three courses may be laid down—namely, 1. to employ irritants; 2. never to use derivatives; 3. to continue the treatment long after an apparent cure has been effected."

"Among the irritants most commonly used in the treatment of phlyctenular conjunctivitis are sublimed calomel and binoxide of mercury, obtained by precipitation."

Curiously enough the calomel is recommended further on for its non-stimulating properties, when the irritation of the binoxide aggravates the disease, and induces follicular conjunctivitis. It is in this class of diseases that the principles of general surgery find their application, and might be advantageously inculcated—namely, to remove all sources of irritation, and protect the abraded and highly sensitive surfaces; for there can be no doubt that the irritation caused by the movements of the eyelids over the ulcerated parts, aggravates and prolongs the disease. When the phlyctenulæ are situated at the margin of the cornea over the ciliary region, the contractions of the ciliary muscle in accommodation keep up the irritation, and this is the most frequent cause of the relapses so common in this affection. To restrain the movements of the eyelids, to paralyse the ciliary muscle, and to give complete rest to the eyes are indispensable conditions in really obstinate cases.

By the separation of follicular conjunctivitis from its true place — pathologically and clinically — among the granular ophthalmias, and by the exclusion of the papillæ from any part in the morbid processes, the author is involved in a discussion as to what constitutes the true granulation. The distinctions made between the two forms are purely artificial, and must be extremely puzzling to those who have not made a special study of the subject. In the epidemic forms of the disease, as seen in schools and workhouses, the papillæ are engorged from the first onset of the affection, and give to the conjunctiva of the upper eyelid that peculiar granular aspect from which the disease has taken its name. These engorged, and ultimately infiltrated papillæ undoubtedly play an important part in the extension of the disease to the conjunctiva of the eyeball and cornea, which in severe types of the disease is so injurious to the vision. The treatment recommended for the vascular and roughened cornea in this and other affections where it sometimes occurs, is, scraping the epithelium, syndectomy (cutting off a ring of the conjunctiva of the eyeball at the margin of the cornea); iridectomy, and the author's operation, sclerotomy, are recommended to the exclusion of inoculation with pus from purulent ophthalmia. The latter, which, in the hands of Mr. Lawson and others, has proved so successful is, he says, too heroic for him, though not generally deficient in that attribute.

After having given a brief account of the minute anatomy of the cornea, he says, "Every one knows that the cornea has always been a field for the most violent and obstinate contests as to the general pathology of inflammation. At the time when cellular pathology held sway I was one of the first to endeavour to place the clinical facts of ophthalmology in harmony with the theoretic principles of that pathology. The difficulties were great; for now that science has advanced so quickly, it can be shown, at least as regards the cornea, that we must no longer, as I once held, look for the essential character of inflammation in some alteration of the nutritive functions of the cellular elements constituting the corneal tissue. We must rather, guided by the anatomy, hold that an absolutely passive part is to be attributed to the corneal tissue in the process of inflammation. It is the migratory elements which, under the influence of the stimulus of inflammation, invading this membrane in more or less considerable numbers, afford a proof that it possesses vitality. The endothelial cells undergoing atrophy have, in consequence of the inflammation, a shorter retrogressive period, and we see, in the breaking down of these cells, traces of such, rather than of a resurrection, which would make them enter a new phase of life."

As a consistent disciple of Cohnheim, and following Saemish, he classifies the diseases of the cornea as follows:—

First, infiltration; second, abscess; third, corneal ulcers.

This classification suffices for those inflammations of the cornea which are due to the propagation of inflammation from adjoining parts, but does not account for those specific forms of superficial corneitis—with their characteristic ground glass like appearance—limited to the epithelial layer, or at most to it and the anterior elastic lamina of Bowman. This disease runs its course in from six weeks to three months, and generally attacks both eyes. The infiltration and vascularity, when they make their appearance—which they sometimes do in the later stages of the disease—are to be regarded rather as signs of healthy reaction, requiring no special treatment, than as essential features of the inflammation. A better appreciation of the difference between the specific and non-specific forms of corneitis would have greatly simplified the treatment which, in the one, is mainly constitutional and, in the other, local.

Iritis, irido-choroiditis, and sympathetic ophthalmia are diseases, the treatment of which frequently falls to the lot of the general practitioner either as primary affections or as occurring in the course of other diseases or injuries. The importance and value of atropine in the diagnosis and treatment of iritis are justly insisted on, for its mydriatic action at once reveals the existence of adhesions of the iris to the lens, and in mild cases may succeed perfectly in detaching them. But atropine and other mydriatics often fail even after the frequent instillation recommended, and for the very sufficient reason that, in plastic iritis, the elastic fibres of the iris are paralysed by the exudation into its substance. Indeed, too much stress is laid on the breaking up of the adhesions, which are not properly the disease, but due to the accidental circumstance of the close apposition of the lens to the iris. When atropine fails after a fair trial, he does not hesitate to recommend mercury in some form, especially in syphilitic iritis; but the rules for its administration are not laid down with sufficient precision. For he does not lay stress on bringing the system quickly and gently under the influence of the medicine; then, and only then, will the pupil yield to the mydriatic, coincident with a general improvement of the symptoms. The action of the medicine must be kept up by continuing it in gradually diminishing doses for a month or two at least. When the health is feeble or broken down with the poison, great benefit is got by the administration of cinchona before, and the mercury after, meals.

The remarks on the treatment of adhesions of the iris, as well as on sympathetic ophthalmia, are very judicious, and will repay a careful perusal.

Having dwelt at some length on the more common diseases of the eye, the space at our disposal does not permit, neither is it necessary for us to do more than make a general reference to the more special parts of the work. Here, as elsewhere, we have the fruits of an exceptionally large experience, and the matured judgment of one who has contributed largely to the recent advances made in this branch of medicine.

The translator has succeeded perfectly in preserving the brilliant style and spirit of the original. He modestly expresses a hope that, whilst the work is intended primarily and chiefly for the practitioners of general medicine, it will also, in many respects be found not unworthy of the attention of the specialist. We apprehend that, whilst it will be read with pleasure and profit by the former, its thorough appreciation must be left to the latter.

The value of the work is enhanced by numerous illustrations, and the translation of the French formulæ.

Outlines of Medical Treatment, intended as a Companion to the Student's Guide to Medical Diagnosis. By SAMUEL FENWICK, M.D. London: J. & A. Churchill. 1879.

"WHEN recently occupying the Chair of Medicine at the London Hospital Medical College, it was my custom to devote the last few lectures of each session to a short outline of the medical treatment of the various diseases which had been described during the course." This opening sentence from the preface indicates the origin of the present work. In his dedication of this little book the author speaks of it as an "attempt to remedy a defect in our medical education—viz., the tendency to adopt physical diagnosis as the basis for treatment to the disparagement of those indications furnished by symptoms, which are of so much importance in leading to a correct method of rational treatment." And on the title page, this volume is said to be "intended as a companion to the *Student's Guide to Medical Diagnosis*," likewise written by Dr. Fenwick, and now extensively used by students, with whom it is a general favourite.

There is something attractive in the idea of dealing with the treatment of disease in the same way in which the diagnosis is dealt with in Dr. Fenwick's other book: indeed, we believe students have often expressed a desire, in reading up his former manual, to have along with it, or incorporated with it, some similar short guide to the treatment of the various diseases alluded to. We fear, however, that the present volume scarcely meets this idea. In the first few chapters, indeed, some general directions are given as to dealing with acute and chronic diseases, particularly as to watching the state of the circulation, of the nervous system, &c., the importance of rest, and of maintaining nutrition, and so on. But in the subsequent portions of the book the treatment of various definite diseases is discussed very much in the same way in which it would appear under the heading of "Treatment" in any work on the Practice of Medicine.

We are rather disposed to doubt the wisdom of thus separating the treatment from the discussion of the diagnosis, etiology, and pathology of the various diseases. Dr. Fenwick's Lectures, as originally delivered, were not open to this objection, as they formed an addendum to a general course on the practice of medicine: and even in this volume, by short sections on prognosis and in other ways, he seeks to lessen the force of the objection which we have suggested. We would much prefer our students to read of the treatment of disease in immediate connection with a full and proper discussion of the whole pathology and diagnosis of the affection.

So far as we have gone over the various sections, the main lines of treatment are judiciously stated, and formulæ are given in an appendix, to which reference is constantly made with regard to details in prescribing.

We could have desired that some greater care had been exercised in the printing of these formulæ, as little errors in such prescriptions are apt to confuse those students whose knowledge of Latin may be such as to make them hesitate in correcting the words printed in their handbooks. We do not refer to the fact that some of the prescriptions are given in English and some in Latin forms, for we consider that quite legitimate, although the mixing of the formulæ seems confusing, but we have also combinations in the *same* formulæ, thus (88), Atropia, 1 gr.; Morphiæ Hydrochlorat., 8 grs.; Spirit and Water, 1 oz. Again, Liniment Aconiti and Liniment Belladonnæ, &c., occur repeatedly in adjacent formulæ. Further on we read Potassæ Bromid. and Potassæ Iodid. (97 and 112); these are not the recognised names either in chemistry or pharmacy. Still more misleading for the unwary student preparing for his examinations are such errors as digitalis foliæ (168), vini antimoniale (177), infusi cinchona flavæ (53), &c. Of course, a little extra care on the part of Dr. Fenwick would remove at once all these slips, which, although trivial in one sense, have a much more serious aspect when we consider that a book like this is apt to be learned word by word, and almost committed to memory by a certain class of students.

The following extracts may suffice to show that the book is written by one of extended experience, who is not afraid to supply illustrations, from his own practice, of what he considers errors and warnings. We do not doubt that they will prove of great interest to our readers:—

"After a lengthened hospital experience as a student, I had arrived at the conclusiont hat blood-letting, and all other depressing measures, were always injurious in pneumonia, and that we should either allow the disease to run its course, or should support the heart by stimulants. With such impressions I entered upon practice in an agricultural district, and one of the first important cases that came under my care was one of pneumonia. I could not fail to remark that the breathing was more oppressed, the pulse harder, and the general distress greater than I had been accustomed to see. I, however, abstained from all active treatment, and hoped the patient would go on favourably. Day by day the symptoms increased in severity, and in the second week she succumbed to the disorder. Mortified at my want of success, I called upon a medical friend and asked him how he was in the habit of treating pneumonia. 'Oh!' replied he, 'in the ordinary way, free bleeding, tartar emetic, &c.' To all my offers to prove to him that bleeding could never cure any inflammation, he only replied that the practice was successful. Shortly afterwards another case presented itself. Here, again, the symptoms were so urgent I felt that active treatment of some sort was required, but prejudice stood in the way, and the patient was only ordered a saline aperient. At the next visit he was much worse, and in desperation I opened a vein, intending to abstract only a small quantity of blood. It spurted from the distended vein so freely that a considerable quantity was lost before its flow could be arrested. The patient was at once relieved, and recovered without a bad symptom.

"During the whole of my residence in that part of the country I invariably used bleeding in the first stage of pneumonia, and always with relief to the patient. I returned to a manufacturing district, and one of the first cases I was called upon to treat was one of pneumonia. Finding he had not been bled, I used the lancet, but the blood merely trickled from the vein, and he became so faint that it was necessary to stop it. The man sank rapidly, and from that day I have never had occasion to use the lancet in this disorder. Now, you will remark that the same disease required different treatment, because the condition of the vascular system was different. In the countryman, the reaction of the heart set up by the inflammation was intense, the blood was driven with great force through the limited area of the pulmonary capillaries, and, in consequence of the obstruction thus produced, the right side of the heart and the venous system became overloaded. Venesection at once relieved a condition that might otherwise have proved fatal, and gave time for the inflammation to subside, and for the powers of nature to repair the mischief. In the latter case the action of the heart was depressed by the inflammation, and stimulants, not venesection, were required to enable it to maintain the circulation until nature could restore the lung to its healthy state."

"An anecdote that used to be related by an old teacher of my own has often been of service to me when I have felt impatient from not attaining rapid results. Dr. S. was requested to see a patient along with a young practitioner. When they retired to consult upon the case the physician thus addressed his junior colleague:—'As we seem quite agreed upon the diagnosis, you had better give him some digitalis.' 'I prescribed it,' said the other, 'but it did not at all agree with him.' 'Then have recourse to mercury in combination with it,' remarked Dr. S. 'I did so,' was the reply, 'and it made him so ill I was forced to give it up.' 'Give him some acetate of potash,' was the next suggestion, but this had also been ineffectually tried. Much amused, the senior recommended various diuretics, but all had been employed in vain. At last Dr. S. addressed the practitioner in these words:—'Your patient has, I find, been under your care for ten days, and in that time you have employed at least ten powerful drugs, no one of which has succeeded. Now, I only know of one remedy likely to be successful in such a critical case.' 'I am sure I shall be most grateful to you for any suggestion,' replied his colleague, 'after so much disappointment.' 'Well, then, sir,' rejoined the physician, 'try some *patience*, for I fear that the want of this has been the only cause of your failures.' 'And that remedy, gentlemen,' Dr. S. used to say, 'cured the patient.'"

Notes for Students. Pathological Anatomy: a Guide in the Post-mortem Room. Part I. By ROBERT J. LEE, M.A., M.D., Cantab. London: T. Richards. 1879.

THE author of this very concise little book has this advantage over some others who have come forward to "assist the student," that he has had practical experience in the subject about which he writes. His remarks, therefore, have some foundation; and in general they are worthy of careful attention. But, in some particulars, the extreme brevity of his description leaves room for error or, at all events, misunderstanding, a fault which is common to all these minute manuals. For example, to remove the bowels he recommends us (page 8) to "ligature the rectal end of the colon: divide beyond: draw the intestines first to one side, then to the other, dividing the abdominal attachments of the mesentery, and remove the intestines." And again (at page 22), he says, "detach the intestine from the mesentery, remove the ligatures, and wash away the excreta by attaching the duodenal end of the bowel to a water tap. While distended with water, open the canal along the mesenteric attachment." Now, this method of procedure is not only difficult, but injurious, for by it the contents of the bowel are washed away, and we have no certainty as to the nature of the contents in different parts: while the force of the water would burst open any weak ulcerated place. We think the plan usually followed, of separating the bowel from its mesenteric attachment *during* *the removal*, and then cutting it open with scissors under a gentle stream of water, is much better and gives more accurate information than the plan recommended by Dr. Lee. Then the directions for opening the head are bald and imperfect, and nothing is said of the methods of opening the middle ear or the spinal column. Possibly these may be described in another part; but what shall we say of the following bright little morsel of pathology? "The *sudden* blocking of an artery, as may be expected, produces a different appearance in the part of the brain it supplies, compared with that which is observed in cases of *gradual* contraction and closure of the vessel. Red, yellow, and white *ramollissement* are thus explained"!!

We cannot recommend this book as a safe guide to pathological work, although we admit that the faults in it are rather to be ascribed to the excessive abbreviation of everything than to want of care on the part of the author. We fail to see the advantage of such very small books.

A System of Midwifery, including the Diseases of Pregnancy and the Puerperal State. By WILLIAM LEISHMAN, M.D., Regius Professor of Midwifery in the University of Glasgow, Physician for Diseases of Women, and Consulting Physician to the Obstetrical Department in the Glasgow Western Infirmary, &c., &c. Third edition. Glasgow: James MacLehose. 1880.

WE are glad to call the attention of our readers to this new edition of Dr. Leishman's well known work, which has already established itself in general favour both in this country and in America. In noticing this third edition we need only direct attention to the differences between it and its predecessor. Although carefully revised throughout, with not a few additions in various places, the net enlargement amounts only to a few pages: one or two woodcuts have also been added, and some new references to recent publications are given in footnotes. The work, however, remains substantially the same in its plan and arrangement.

Amongst the additions we observe short references to the new operation of gastro-elytrotomy and laparo-elytrotomy, and to the postural method of turning. Reference is also made to Tarnier's forceps, and to the application of forceps to the breech; these references, however, are so short that their chief value consists in directing the attention of the reader to their existence. Some additions have also been made to the section on embolism and thrombosis of the pulmonary artery, and special attention is directed to the connection of this form of embolism with attacks of pleuro-pneumonia in puerperal women, which seem to be not uncommon, although only of late regarded in this light. Some slight changes are also noticeable in the chapters on puerperal fever, but they do not modify the views expressed in the previous edition; indeed, the result is to render the author's denial of a definite and specific puerperal fever poison more clear, and to refer the various forms of this fatal disorder either to septicæmia and pyæmia, or to erysipelas, scarlatina, and the other specific fevers.

On reading over the various chapters dealing with puerperal ailments, one cannot fail to be struck with the importance attached by the author to septic influences, not only as regards the formidable attacks of puerperal fever, but also as regards phlegmasia dolens, pelvic abscess, pelvi-peritonitis, &c. In like manner, we notice throughout the volume constant allusions to the value of antiseptic precautions in connection with various forms of operative treatment. The assistance given by obstetricians to the study of Hospitalism has been of great benefit to general surgery; and the brilliant achievements of their allies, the ovariotomists, have been of the utmost value in directing attention to the conditions favourable or adverse to the performance of serious operations. All this has tended to the propagation of the antiseptic system of surgery first introduced by Prof. Lister in our own city; and in the methods supplied by the great perfection to which this system has now been carried general surgery can now repay the ovariotomists for all their assistance in the good work. There can be no doubt that the marvellous increase in the safety of this once formidable operation is largely due to the antiseptic system. Indeed, when we read of Dr. Keith's performing 70 consecutive ovariotomies without a single death, we are forced to inquire whether the more rigorous application of some of the same principles to the practice of midwifery might not render operations in this department much less formidable, and even rob ordinary obstetrical practice of some of its incidental and accidental horrors. We find, as we have said, frequent reference to antiseptic precautions in this volume; but perhaps some more definite statement of the application of the antiseptic system to midwifery practice ought to have been introduced in a separate chapter.

This handsome volume, issued from the Glasgow press, is a credit to the publisher to the University, as well as to the University itself.

1. *The Dissector's Guide: being a Manual for the use of Students.* By D. J. CUNNINGHAM, M.D., C.M. Illustrated by J. Dunlop Dunlop. Part I. Upper Limb—Lower Limb —Thorax. Edinburgh: Maclachlan & Stewart. 1879. pp. 201.
2. *Manual of Practical Anatomy.* By J. COSSAR-EWART, M.D., F.R.C.S.E. With outline plates engraved by William Ballinghall. The Upper Limb. London: Smith, Elder & Co. 1879. pp. 69.

THE last two years have seen the production of an unusual number of books on dissection, among which we may mention Cleland's *Directory*, Hensman's *Outlines*, Godlee's *Atlas*, and the two works now brought under our notice. Such a crop of works upon a subject only studied by a very small section of the community must indicate either that there are at present many enthusiastic anatomists anxious to distinguish themselves in the field of literature, or that the works now in use by students are generally felt to be inadequate and unsatisfactory. Both these reasons have, we believe, been operative in influencing the production of the instalments of dissecting manuals which Dr. Cunningham and Dr. Cossar-Ewart present for our notice; and we feel as keenly as they do that some substitute is required for those manuals which have been so long popular, but have not, despite occasional revisal, kept pace with anatomical knowledge and anatomical teaching. We cannot, however, congratulate the authors of these specimen pages (for we can call them no more) on their success in the attempt to make up for these deficiencies. Dr. Cunningham's work has the conspicuous fault which we pointed out as distinguishing Professor Cleland's *Directory.* Its aim is to teach a student how to dissect, not to teach him anatomy, so that a student using it will require to have beside him another work on anatomy. Now, as Dr. Cunningham's book will certainly consist of two, and possibly, of three parts, and our standard anatomical authority is in two, we may expect, in the future, should this system of teaching become popular, to see students groaning under the weight of books which they will daily have to carry, or followed by a small boy subsidised for the purpose of doing this drudgery for them. To be of real use to the student, any "dissector" must not only tell him how to use his tools and what he may expect to see, but how to identify the nerve, artery, or muscle he is to find, what are its connections, relations, and uses, and what is its especial surgical interest. That Dr. Cunningham himself feels this, is evident from his change of front in the latter part of this portion of the book, for in describing the thorax, he not only gives the different stages of the dissection and mentions the structures found, but describes those structures at length, and even takes up nearly two pages of small print in describing the *action* of the valves of the heart. We hope that the further portions of the work will be after his later, and not after his former manner.

Dr. Ewart, in avoiding the fault which Dr. Cunningham has committed, has, we think, gone to the opposite extreme, for his descriptions of dissection are so brief as to be often practically useless. The tabular form of the work makes brevity, no doubt, a necessary characteristic, but when this leads to the omission of essential particulars, it becomes an evil which is not counterbalanced by any prominent advantage. In reading the book carefully through, we thought it well to note on the margin any evident omissions, and on again glancing at it as we sit down to write this, we find that nearly half the pages have such marginal annotations. Space will not allow of our detailing these, but it may interest Dr. Ewart to know that most of them relate to the action of muscles, most of the descriptions of which we have found very defective.

There is a great contrast between these two books as regards diction, Dr. Cunningham giving his description in smooth, idiomatic English, while Dr. Ewart confines himself to curt sentences, for the most part deficient in conjunctions, and occasionally short of verbs.

Catalogue of the Library of the Royal Medical and Chirurgical Society of London. 3 Vols. Printed for the Society. London. 1879.

In a recent notice of some bibliographical works we referred to the announcement of the above catalogue, and we are glad to call the attention of our readers to it now that it has appeared. The first two volumes consist of an alphabetical list of authors of the various books, pamphlets, theses, and reprints in the library; and in the case of various cyclopædic works, such as *Ziemssen's Cyclopædia, Reynolds' and Holmes' Systems,* &c., the authors of the various articles are entered in the alphabetical list, with a cross reference to the work concerned. In an appendix to the second volume we have three separate lists of Transactions, of Journals, Magazines, and Reviews, and of Reports. The third volume consists of an index to the catalogue of the library, arranged according to subjects. The whole work seems, so far as we have examined it, to be admirably executed, and its publication is not merely a great boon to the Fellows of the Society, and those who may consult the library itself, but also to all those, in any place, who have occasion to search out the literature of any medical subject.

The index of subjects is, of course, the portion which is most generally useful to the profession as a work of reference, and the important change introduced in this edition, whereby the lists of authors on a subject are arranged chronologically, with the date of their publications attached, must be regarded as a great improvement: the reader can thus guess from the date, if the name of the author be unknown to him, whether the work is likely to contain the kind of information which he is searching for. Under the heading of Medicine a list of ancient authors is drawn up, with their approximate dates, to prevent any fallacy from appending the year of publication of the special editions contained in the library.

In the catalogue of authors the printing is so arranged that when several works by the same author are given, the repetition of the name is indicated by a dash, but when the persons are different, although of the same name, this is repeated. This is an important point, but one which in some cases it is difficult to settle, and errors, of course, are apt to occur. Thus we notice that an article on typhus and one on some cases of croup are both put under the name of George Buchanan, although the one is by a London physician and the other by a Glasgow surgeon; this, however, is corrected in the errata. On the other hand, the work by Mr. John Roberton on the Mortality and Physical Management of Children (1827), and the other works by the same well known Manchester surgeon, on Midwifery and Hospital Construction, &c. (1851 and 1860), are entered as if the writers were different persons.

With regard to the fulness of the titles, we think the authors of this catalogue have drawn the line very fairly. In the preface they give an admirable specimen of the voluminous title pages with which they would have to deal if they aimed at giving them in full—18 lines of small type being required! On the other hand, the titles are given with fair fulness, and any interpolations which may seem to be required are inserted within brackets.

The following passage from the preface may be interesting to the general reader, who may care but little for the niceties of cataloguing:—

"It is interesting in regard to the time that has gone by since the catalogue of 1856 was printed, and perhaps, as an argument in favour of the new edition, to notice some of the collateral changes in the history and progress of medical literature. The time is nearly that of a generation, and a comparison of the two catalogues gives some remarkable illustrations of the constant growth of science, and of the as constant succession and rapid passing away of its individual cultivators. It would be invidious to mention particular names, but it might be interesting to inquire how many of the more important names in modern medicine and surgery—alike of those now living as of those who have passed away in recent years—how many of those, the fame of whose text books has already been superseded by that of their successors, had not yet made their appearance in the literary arena when the previous catalogue was published. We may, however, casually enumerate several topics and questions in science and medicine, which have either been the growth of years succeeding its publication, or of the existence of which the old catalogue gives little or no sign.

"Protoplasm and the cell theory of development—Darwinism and the origin of species—man's antiquity and place in nature—anthropological science and the establishment of anthropological societies—the new chemical notation—the cerebral localisation of function and disease—progressive muscular atrophy, locomotor ataxy and aphasia—the literature of ozone, with the exception of the work of its discoverer, Schönbein, of embolism, excepting the paper of Kirkes, and of bronzed skin with disease of the suprarenal capsules, with the exception of the classical work of Addison —syphilitic brain and visceral disease—the literature of diphtheria since the later attention drawn to it by the epidemics of 1855-58—the naming and identification of enteric fever—hospitalism, pyæmia, septicæmia, and wound fever—the cattle plague and trichinosis—the observation of the temperature of the body in health and disease—the climate of mountainous regions in phthisis, and the most important part of the modern literature of balneology and mineral waters—the larger proportion of the literature of ovariotomy and excision of the joints—electrolysis—skin grafting—the discovery and rise of the laryngoscope—the literature of the ophthalmoscope (with the exception of the works of Van Trigt and Jaeger)—iridectomy in glaucoma—the endoscope—hypodermic injection—the antiseptic system, and the disinfecting power of carbolic acid—the plans of treatment by Marshall

Hall and his successors for recovery from apparent death—the establishment of physiological and pathological laboratories at home and abroad, and the issue of their reports—and the whole modern body of military medicine, surgery, and hygiene gained from the experience of the long series of wars which have followed in quick succession on the campaign in the Crimea."

We cannot conclude this short notice without congratulating the Society and Mr. Wheatley, the librarian, on the successful issue of their arduous undertaking.

On Deafness, Giddiness, and Noises in the Head. By Edward Woakes, M.D. London: H. K. Lewis. 1879.

This treatise, a considerable portion of which has appeared at different times in the Medical Journals, is a valuable addition to aural literature. The first part of the work treats of ear complications during dentition, and in the exanthemata; also of ear-cough, and the laryngeal complications dependent on diseases of the ear. The greater part, however, is occupied with the consideration of labyrinthine giddiness and noises in the head, phenomena which receive very inadequate notice in the usual text books; certainly they are not generally treated of in a way commensurate with their frequency and their distressing character. Dr. Woakes has, in the volume before us, examined these symptoms, especially with regard to their causation, in a scientific spirit, and with a thoroughness which is truly commendable; and he has undoubtedly helped to elucidate a confessedly difficult subject. He finds a clue to the causation of these phenomena in the sources of the vessels which supply the affected region, and in the nerves which control these vessels. The vaso-motor nervous connections of the ear are traced most carefully, in order to discover alliances between parts histologically distinct, near or remote, which might explain vascular disturbance in the organ of hearing. His explanations are based on the fact that "in numerous instances in the economy the local connections of vaso-motor innervation are such that given tracts of tissue, not otherwise connected, are thereby kept in nutritive correlation one with another." The references to the anatomical relations of the nerves of the ear are very interesting and instructive; and, while we may not always agree with his hypotheses, or admit that his deductions are always warranted by the facts, we must concede that the views promulgated are both original and suggestive.

In the first part of his book, Dr. Woakes very properly insists on the importance of looking to the ear when brain symptoms develop themselves in an infant, and points out how readily, by the open petro-squamosal fissure in the child, inflammation in the tympanic cavity may extend to the membranes of the brain. On this subject he says, "I am more and more convinced that many obscure and often fatal illnesses in children which, from their affinities, are regarded as acute cases of hydrocephalus or brain fever, would, if examined from an aural point of view, be found either to originate in this organ, or be due to its implication in a reflex way; and I cannot too strongly insist on the importance of such an examination being made whenever brain symptoms arise, and the cause of them is doubtful, or in any respects obscure."

That common affection of infantile years, purulent otitis, has unquestionably often its source in a carious tooth, or in the process of dentition. Dr. Woakes finds an explanation in the circumstance that the inferior dental nerve and the nervi vasorum, round the temporal branch of the carotid, are brought into communication at the otic ganglion. The extraction of the carious tooth, or incision of the inflamed gums would, he says, probably cure the inflamed tympanum by "diminishing the waves of irritation."

We are familiar with the fact that a fit of coughing may be provoked by a mechanical irritation of the meatus of the ear. May not a blast of cold air playing on the external auditory canal—Dr. Woakes asks—produce other laryngeal disturbances, if long enough continued? The chain of events is as follows: "The irritation of the sensitive fibres of the auriculo-pneumogastricus distributed in the meatus, is reflected along the motor fibres of the superior laryngeal nerve, exciting in the larynx the act of coughing, by causing contraction of the crico-thyroid muscle, and in some very susceptible subjects, of vomiting also. If the stimulus be sufficiently prolonged, other conditions ensue—viz., tissue changes which make the evidence of participation in the process of the vaso-motor elements quite unimpeachable. We then see functional derangement becoming structural lesion, not by varying the experiment, but simply by prolonging it." In suggesting that a draught of cold air falling upon the ear may occasionally, in this way, excite spasmodic croup it is proposed "to provide against exposing the ears to the access of cold winds in children predisposed to this affection, a provision which can be readily arranged by allowing the hair to fall over the ears, which it would do naturally if not prevented, as well as protecting the chest and throat, to which regions attention is at present entirely confined."

A most important section of the book is devoted to tinnitus aurium, the *bête noire* of aural surgery as it may be called, which forms a prominent feature in many diseases of the auditory apparatus, and is often more insufferable to the patient than the deafness with which it is generally associated. The continuity and monotony of the sound sometimes become intolerable, distracting the mind in the duties of the day, and making sleep almost impossible by night, bringing about a state of nervousness and irritability bordering upon mental disease, and, in cases where a predisposition exists, leading up to insanity itself. Deaf to the sounds of the outer world, he is tormented with the most dreadful noises within, and the unfortunate sufferer has been known to seek relief from his affliction in self-destruction. Any additional light which might aid in dispelling the obscurity still enveloping this subject is welcome, and it can be safely said that Dr. Woakes, in dealing with the subject of noises in the head, has done good service in that direction. While the causes on which the different forms of tinnitus aurium depend are not yet clear, we think that the following scheme, by Dr. Woakes, is a useful classification, and likely to help the student of this subject:—

LOCAL MORBID CONDITION.		CHARACTER OF SOUNDS.
1. Labyrinthine congestion—arterial,		Pulsating noises.
Do. do. venous,		Rushing noises.
2. Anæmia, aneurism—extra aural,		Pulsating noises.
3. Fluid in tympanum or Eustachian tubes,	Catarrh of middle ear,	Bubbling and gurgling noises.
4. Congestion of membrana tympani, Eustachian cavity of tympanum, or Eustachian tube, or all of these together,	Chronic non-suppurative inflammation of ear,	Tidal noises (the sound heard when a shell is held to the ear.)
	inducing	
5. Undue contraction of intrinsic muscles,	Reflex irritation of tensor tympani nerve from otic ganglion,	Singing and tidal.

In discussing the sounds due to labyrinthine congestion, which are pulsating or rushing, according as the congestion is arterial or venous, Dr. Woakes places emphasis on the fact that the internal ear, or perceptive part of the organ, gets its supply of blood from the vertebral artery which, rising from the subclavian in the neck, is quite distinct from the blood supply of the more external parts. The calibre of this vessel is regulated by the nervi vasorum from the inferior cervical ganglion of the sympathetic, and is in this way brought into important relationships. When the inhibitory power of the nerve is removed, the ramifications of the terminal branches of the vessel in the labyrinth are not only surcharged with blood, but also press upon the delicate nervous arrangements, and so it is not surprising that the sounds of the ear are synchronous with the pulse. This is the class of cases for which the author would use hydrobromic acid, a drug the use of which was suggested by Dr. Fothergill, from the consideration of its effects in counteracting the aural symptoms produced by large doses of quinine. Dr. Woakes considers that cinchona and the hydrobromic salts have a special influence on the area supplied by the vertebral artery, that while the former paralyses the vessels, thus causing dilatation, the latter increases the inhibitory control of these vessels, and so brings about contraction. This is one of the instances in this work where an attractive theory, requiring more evidence before we can give it complete acceptance, is advanced as an explanation of the causation of a symptom. In like manner, iodine is held to have a specific influence on the circulation of the middle ear, and "the salts of ammonia owe their adaptability to the object in view to the physiological property which they possess of causing the peripheral vessels to contract their calibre." The truth is, it is impossible to define the class of cases improved by hydrobromic acid; while some cases seem benefited by it, unfortunately, in many cases of pulsating tinnitus, it is quite useless. Neither its *modus operandi*, nor the precise indications for its employment are at all clearly settled. With respect to the use of electricity in the treatment of noises in the head, Dr. Woakes rightly points out the importance of selecting the proper kind and strength of current, the mode of applying it, and the proper intervals between each application. He would employ the Faradic form when the tinnitus is presumed to be due to pressure of the ossicular chain upon the membrane of the foramen ovale, from defective action of the tensor tympani or stapedius muscle, or abnormal fixing of the ossicles from adhesions or other causes. In such cases, gentle Faradism applied at weekly intervals, by stimulating the stapedius and thus pulling out the stapes from the fenestra ovalis, or by increasing the mobility of the ossicles, might tend to remedy some of the causes on which the noises in the head may depend.

Our experience has not at all led us to share in Dr. Woakes' opinion of the usefulness of forcing vapour into the tympanum by the Valsalva method for the relief of disease of the middle ear. Many people, with Eustachian tubes normally permeable, are quite unable to inflate their tympana in this way; while, should there be any obstruction, such as a thickened mucous membrane, the patient's efforts are futile, and they are, at the same time, very likely to aggravate the hyperæmic condition which may be present. We are astonished to find the author recommending the bivalve form of speculum, an instrument which we thought was now discarded as cumbrous and unsafe, besides being constructed to effect an impossibility—namely, the dilatation of a passage having unyielding osseous walls.

We have done with fault finding, and would only add that to all who are interested in aural diseases, Dr. Woakes' work will, from its really scientific efforts to explain little understood phenomena, amply repay perusal; while, at the same time, it is far from being devoid of instruction to the general practitioner of medicine, because it has an interest beyond the particular organ of which it treats.

REPORTS OF HOSPITAL AND PRIVATE PRACTICE.

GLASGOW ROYAL INFIRMARY.

REPORTS UNDER THE SUPERVISION OF DR. J. WALLACE ANDERSON.

FROM DR. MACEWEN'S WARDS.

RADICAL CURE OF HERNIA: LIGATURE OF INTERNAL INGUINAL RING BY CHROMIC ACID SUTURES.—A. S., æt. 29, was admitted 29th September, suffering from inguinal hernia on the left side, of two years' duration. This had caused her very considerable annoyance, and she had frequent attacks of vomiting with great pain. These attacks occurred at intervals when the hernia was down, and lasted for some time after it was reduced. She was therefore determined to have it operated upon. On examination, Dr. Macewen found an inguinal hernia on the left side, the ring of which was large, and the hernia protruded whenever the patient rose out of bed. She wore a truss, and stated that she had done so for a couple of years.

20th October.—Patient having been put under chloroform, the inguinal ring was laid bare, the sac invaginated, and the pillars of the ring brought together by chromic acid ligatures introduced by an aneurism needle. A couple of ligatures were applied, and the ring occluded. The wound was brought together, first with a button suture, and then by two deep stitches of chromic acid gut. Finally, the edges were brought together with fine catgut stitches, a horse hair drain was inserted, and a pad applied over the ring. A week after the operation the wound was looked at for the first time and found to be healed. The carbolized catgut stitches had been absorbed, but the deep chromic acid sutures were still firm. The horse hair drain was removed. A fortnight afterwards the wound was looked at a second time. The chromic acid sutures were now slightly elastic, and one was found to be whitish and slightly softened; it would not, however, come away by pulling. Three weeks afterwards the sutures were all whitened and softened and beginning to give way. On removing them, they broke through completely with a very slight strain. So far as could be ascertained, the pillars of the ring were close together and firmly adherent. The patient was sent to the Convalescent Home for three weeks.

20th December.—Patient returned yesterday from a three weeks' residence at the Lenzie Convalescent Home. She has there had the ordinary amount of outdoor exercise, and had previously being going about the Infirmary ward for a week. At the present date the pillars of the external abdominal ring are firmly united, although previous to the operation the aperture was very marked. There is not the slightest impulse on coughing. It is now nine weeks since the operation was performed.

TREPHINING OF THE SKULL ANTISEPTICALLY.—S. W., æt. 17, was admitted 8th November, 1879, with a wound about one inch and a half in length, situated over the back of the head. On examination, it was found that in addition to the scalp wound, both tables of the skull were driven in, and this indented portion was pushed under the skull at the outer border of the wound. The depressed portion was not in a single fracture, but more like a series of fractures, resembling somewhat the green-stick variety. It was first attempted to be elevated, but this proving unsuccessful, the operation of trephining was had recourse to. This having been done, a portion of the inner table of bone, about half-an-inch in breadth, which had separated from the removed disc was elevated and left *in* *situ.* The periosteum, which had been divided, was then stitched, and the wound closed with a button suture. The operation was conducted throughout under the antiseptic spray. The fracture did well from the first; there never was a drop of pus from the wound, which was found to be firmly united on 20th November. On 2nd December patient was allowed to get up out of bed. It may be remarked that there was complete immunity from head symptoms in this case, and it was with difficulty that the aperture could be detected owing apparently to the bone having united.

FROM DR. MORTON'S WARDS.

AMPUTATION AT THE HIP WITH USE OF DAVY'S LEVER.—The patient, a man, aged 54, was admitted to Ward XIX with malignant disease (spindle-celled sarcoma) of the middle third of the femur. Amputation at the hip having been decided upon, Dr. Morton performed the operation as noted below. The case is recorded on account of the method adopted to control hæmorrhage. It was that recommended by Mr. Davy of London—viz., compression of the common iliac artery by means of a lever passed into the rectum. In the *British Medical Journal*, November 1st, 1879, Mr. Davy has an interesting paper on the subject, in which the method is carefully explained, and ten cases recorded in which the lever had been employed. In the present case, Mr. Davy's plan was followed exactly, Dr. Foulis having charge of the lever. It was graduated in inches and was passed up to the tenth inch, this having been found to be the proper distance in the dead body. The control of the vessels was perfect. Dr. Morton commenced by tying the femoral artery and vein close to Poupart's ligament, but this was simply the method of operating which Dr. Morton had determined on before he had thought of adopting Davy's plan. Very little blood was lost, not more than five ounces, and that for the most part was distal oozing, although the limb had previously been bandaged from the ankle to the middle of the thigh and raised before commencing the operation. The lever used was made after Mr. Davy's pattern, from an old billiard cue, by Mr. Nelmes, Wellington Street, at a cost of half-a-crown.

December 19th.—Although there was no hæmorrhage, the patient gradually sank and died yesterday afternoon, on the third day after the operation.

WESTERN INFIRMARY.

Reports under the Supervision of Dr. W. G. DUN.

From Professor M'Call Anderson's Wards.

DILATED STOMACH—MECHANICAL EMPTYING OF STOMACH—IMPROVEMENT.—In the March and April Numbers of last year, two cases of dilated stomach are recorded; both of these occurred in adults. The present case is interesting from the youth of the patient, a girl of 13 years. She was admitted to the hospital on 9th October, 1879, and is still under treatment. She was suffering from persistent vomiting, and had become considerably emaciated. Her family history is good. Until a year ago her health had been quite satisfactory, but about this time occasional vomiting took place, which soon became both frequent and severe. The vomited matter was at first sweet to the taste, but latterly it has become sour, has a sour smell, is watery in character, and has a frothy yeasty appearance. The quantity vomited at one time is large, filling a small hand basin. Vomiting is easy, and without sickness or nausea; bowels are regular; tongue clean; temperature and urine normal.

It appears that both before and since the occurrence of vomiting she had been in the habit of drinking tea very frequently—as often as four times a day.

On examining the abdomen at the date of admission, a marked swelling was observed in the middle line, between the ensiform cartilage and the umbilicus (this always subsided after vomiting); and, by percussion, the outline of the greatly distended stomach could be made out. It appeared to overlap the left lobe of the liver, and this organ, as well as the heart, was slightly displaced upwards. On placing the ear near the epigastrium, and shaking the patient, a very distinct splashing sound (succussion) was audible. On microscopic examination of the vomited matter, *torulæ cerevisiæ* and *sarcinæ* were seen in abundance.

A variety of remedies have been tried in this case, but the most satisfactory results, so far at least as the sensations of the patient are a guide, have been attained by daily emptying the stomach, and washing it out with water containing ʒi of hyposulphite of soda, in the manner already described in the cases before referred to. Hyposulphite of soda is also given in 15 grain doses thrice daily. The bowels are freely emptied every morning with Carlsbad salt, and small doses of strychnia are administered before each meal. It might be thought that some difficulty would be experienced in carrying out this rather disagreeable treatment in so young a patient, but quite the reverse has been the case, as the girl has experienced so much relief that she rather welcomes the treatment, and does not wish it discontinued.

PRURITUS PUDENDI OCCURRING IN A CASE OF DIABETES.—Trousseau, in a clinical lecture on diabetes, writes as follows:—"When you are consulted by women who are becoming elderly, for intense itching in and around the vulva,—when, on examining the parts, you find that there is eczema, and learn that it comes on irrespective of the menstrual periods, or of any leucorrhœal discharge, and that the pain it occasions is so great as to prevent sleep, the probable existence of glycosuria will suggest itself."

A case illustrative of this statement of Trousseau's is at present in the hospital, under Dr. Anderson's care. The patient, aged 55, was admitted complaining of "intense itching in and around the vulva," which had caused her great annoyance for some time past. She suffered also from leucorrhœa. On examining the parts, they were found to present an inflamed and excoriated appearance, the excoriations being due, of course, to scratching.

Aware of the significance which the chief symptom in this case at times has, Dr. Anderson, on a closer investigation of the case, discovered, as he suspected, that the woman was suffering from diabetes.

It is not necessary to say anything further as regards the case, the object being merely to direct attention to the occasional occurrence of such eczematous eruptions in connection with diabetes, and the desirability of remembering this in dealing with such cases.

FROM PROFESSOR GEORGE BUCHANAN'S WARDS.

HERNIOTOMY.—The following case presents some rather unusual features, which led to a little difficulty in the diagnosis, and caused delay in the steps of the operation.

J. R., aged 43, was admitted to the Western Infirmary on the evening of Thursday, the 18th December, 1879. He gave the following account of himself:—

Fourteen years ago, while exerting himself, an inguinal hernia came down on the right side, which, after a little trouble, was reduced by a medical man. Since that time he has worn a truss, but frequently the hernia has come down, and sometimes it has remained down some hours before he succeeded in returning it. On the present occasion it came down on Saturday the 14th, and has not been returned, nor even reduced in size, although, during the day before admission, his doctor made attempts involving a good deal of force.

He declares that he has had a motion of the bowels within forty-eight hours; but, on questioning him, it appears that it was watery—possibly only the fluid of an injection which had been given. For twenty-four hours he has been vomiting, at intervals, greenish watery fluid; no offensive odour or fæcal appearance.

The tumour, at 9 P.M., when seen by Dr. Buchanan, was the size of the two closed fists, tense, tympanitic, red, œdematous, painful.

In the circumstances, as the symptoms of strangulation were not urgent, and in some points doubtful, Dr. Buchanan ordered fomentations to the tumour, an injection of laudanum, a subcutaneous injection of morphia immediately, and small quantities of milk—a teaspoonful at a time — to be given during the night.

19th November, 9 a.m.—No improvement; tumour precisely as last night; vomiting continuing at intervals; tumour red and tympanitic.

The patient was put under chloroform, and it being found that pressure on the tumour produced no effect on its size, or any sound of gurgling, Dr. B. cut down on it in the ordinary way. The tumour was so distended and tympanitic that a few touches of the knife seemed to be all that would be necessary to reach the sac; but, contrary to expectation, the coverings were so thickened and œdematous that quite a quarter of an inch intervened between the skin and the sac. When the peritoneal sac was reached, the tympanitic distension gave the impression that the bowel was adherent to the sac and distended with gas; but, on scratching a small hole, a stream of foul gas escaped, followed by a jet of putrid fluid of a whey colour. The sac was now freely laid open, and at the bottom was seen a knuckle of intestine, coated with greenish lymph, and adherent to the posterior wall of the bag in which it lay. The sac contained about 4 ozs. of fluid, greenish in colour, turbid, full of flakes of curdy lymph. The stricture at the neck of the sac was divided. When some of the lymph was peeled off, the intestine was seen to be dark red, but not gangrenous. As it was closely adherent to the sac, it was left in its place, and the edges of the incision brought together with silver sutures, a large india-rubber tube being passed through the scrotum from the first incision to another made behind for the purpose.

An opiate injection was ordered, and a subcutaneous injection of morphia at bedtime.

22nd December.—Patient has been quite comfortable since the operation. No vomiting; has had some sleep and has taken a little food; going on well.

24th December.—Going on favourably.

25th December.—Patient had a good night. There was a free natural motion of bowels yesterday. Appetite fair. General condition good.

WOODILEE ASYLUM, LENZIE.

REPORTED BY J. CARSWELL, L.R.C.P.E.

CASE OF RIGHT HEMIPLEGIA WITH APHASIA, COMING ON DURING PREGNANCY—DEATH—EXTENSIVE YELLOW SOFTENING OF LEFT ANTERIOR LOBE.—Mary M'P. or W., admitted 13th September, 1879, aged 28 years. Married. Never previously insane. One of the medical certificates states: "Patient is depressed, deficient in intelligence, answers questions slowly, and seems not to comprehend fully the meaning of the simplest question; takes no interest in anything occurring in the house."

On admission she was dull, listless, and rather stupid in manner. She suffered from slight paralysis of right arm and leg, with aphasia; there was no facial paralysis. She was in the last month of pregnancy. An *exact* history of the case could not be obtained, her husband being either unwilling or unable to give precise information. As correctly, however, as could be ascertained, the attack of hemiplegia occurred about five or six weeks previous to admission, and seems to have been accompanied by evident mental depression, and some degree of aphasia, but there does not seem to have been any sudden loss of consciousness. She had always enjoyed good health; had been married five years; had three children, the first of whom died when eleven months old, but not of convulsions or any nervous disease; her confinements had always been natural. During her first pregnancy she had an attack of what her husband says the doctors called "sunstroke," which was accompanied by convulsions; she recovered from this before her confinement. This illness occurred during the summer season, when she was engaged at outdoor agricultural labour. From a neighbour it was afterwards learned that she had convulsions during her last confinement.

On 17th September she had an apoplectiform attack which was followed by an evident increase of the paralytic symptoms and of the aphasia. Sensation seemed to be unimpaired.

On 26th September she was delivered of a healthy female child. *On 28th September* she was depressed and evidently out of sorts, but did not complain of pain or tenderness on pressure over the abdomen.

On 29th September the following note was made: "Though still dull and listless, she seems to be rather better; she takes her food pretty well, and is apparently free from pain or tenderness of the abdomen. The aphasia continues well marked, she being only able to say 'no,' 'ay,' and 'fine.' When the sole of the right foot is tickled she draws up the *left* foot, but if the tickling be continued she draws up the right foot also." *7 p.m.* She is in a semi-comatose condition, from which she is aroused with difficulty, and then her attention can be sustained for but a very short time. The paralysis of the right side seems to be increased. Her breasts are full and tender. To have ung: belladonnæ applied. A short cough is observed to-night. The physical signs in the chest were obscure, but showed some engorgement of right lung. Left lung normal. Temperature, 99° F.; R. 20; pulse, 76.

On 30th September she was still in a semi-comatose condition; could not put out her tongue. Face flushed and dusky; eyes had a dull, hazy aspect; pupils normal. There was increased lachrymation of the right eye. The cough continued, but there was no sputum, nor was there any change observed in the state of the lungs. Morning temperature—right side, 101·4° F.; left side, 99·7° F. Evening temperature—right side, 101° F.; left side, 99·8° F. The following day her general condition was much improved, and the comatose condition had nearly disappeared. It was observed that, under the influence of the belladonna, the mammæ were decreasing in size, and the left more rapidly than the right. Morning temperature—right, 99·6° F.; left, 99·2 F. Evening temperature—right, 99·4° F.; left, 99·2° F.

This improvement continued, and the lung complication seemed gradually to disappear. The morning and evening temperatures showed very little variation; occasionally the evening temperature was slightly below that of the morning. The temperature of the right side kept invariably from ·2 to ·4 of a degree above that of the left.

On 10th October she had a slight apoplectiform attack.

On the morning of the 11th October the nurse observed that she became *gradually* unconscious. At the morning visit she was perfectly comatose; pupils widely dilated and insensible to light; breathing stertorous. Death occurred in about six hours after the onset of the attack.

Post-mortem examination, made forty-eight hours after death, showed the following:—Heart normal. Marked congestion at base of right lung, and both lungs generally more or less congested. Uterus well contracted and healthy; was apparently undergoing the process of involution in a normal manner. Other organs normal.

Brain.—Dura mater healthy. The vessels of the pia mater greatly engorged. Extensive disintegration and liquefaction (yellow softening) of almost the entire left frontal lobe. It involved the entire thickness of the cortex of the third (Broca's) convolution. On section, the brain substance generally had an extremely white appearance, was very soft, and a great part of the corpus callosum readily washed away under a stream of water. The vessels at the base of the brain appeared to be healthy. There was no occlusion of the left middle cerebral artery.

Note.—It can hardly be said that this woman was insane in the usual acceptation of the term.

MEETINGS OF SOCIETIES.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.

Session 1879–80.

Meeting I.—3rd Oct., 1879.

Dr. Fergus, *President, in the Chair.*

The President stated that the Society had on the previous day sustained a loss in the death of one of their original members, Dr. J. G. Fleming, one of the oldest and most eminent practitioners in the city. He occupied the chair of this Society a good many years ago, had been repeatedly President of the Faculty, and was one of the surgeons, and latterly a Manager of the Royal Infirmary. Dr. Fleming was a man thoroughly honest and straightforward in character, and was possessed of great sagacity, firmness, and sound judgment. He moved that an address of condolence be sent to his surviving relatives. The resolution was unanimously agreed to.

DR. MORTON showed PREPARATIONS FROM A CASE OF MULTIPLE ANEURISM. In August, 1878, the patient had been operated upon by him for aneurism of the right femoral artery, the right external iliac having been tied. The wound had healed by first intention, inclosing the ligature (a silk one), and the man was dismissed well. He resumed his occupation (that of a boiler-maker), and worked at it till shortly before his re-admission to hospital on 14th July last. A pulsating tumour was then found in the upper part of left thigh, about an inch below Poupart's ligament. This was diagnosed to be an aneurism of the left femoral artery. On 16th July the left external iliac artery was tied with a silk thread, the ends being cut short, and the edges of the incision brought together by metallic sutures. The patient appeared to be getting on fairly well for some time, till it was observed that there was some serous matter oozing from the wound; this was followed on the 22nd July by a great gush of blood. Drs. Macewen and Clark, being in the hospital at the time, saw the case. Dr. Macewen tied the artery with silk, using Lister's abdominal tourniquet. The patient quickly rallied from the effects of the hæmorrhage. On 3rd August the ligatures came away. On 10th August a rapid swelling appeared at the seat of aneurism, with pain, which was relieved by ice. During Dr. Morton's absence on holiday the sac appeared to have suppurated, and the abscess was opened by Dr. Cameron. On 1st September Dr. Morton resumed duty at the hospital, and two or three nights afterwards was sent for, and found that the patient had lost a good deal of blood. He cut down till he reached the femoral, and, with some difficulty, discovered that the bleeding was from the distal end of the artery. This was secured by a silk ligature. He appeared to be again gaining strength till, on 13th September, he was suddenly attacked with pain over left side of chest, faintness, and dyspnœa. These symptoms, relieved at the time by treatment, recurred in an exaggerated form on 16th September, and the patient, though fairly well at the usual morning visit, soon thereafter became uneasy and faint, and died in about an hour.

The *post-mortem* examination showed that the cause of death was the bursting of an aneurism of the descending aorta into the thorax. There was also found an aneurism of the abdominal aorta three quarters of an inch above its bifurcation, which had not burst. The state of the arterial system was such as to predispose to aneurism, the vessels being lined with atheromatous deposit.

That the first operation was beneficial, and lengthened the patient's life, did not admit of doubt. It was now more than doubtful whether the same could be said in regard to the second operation; though at the time it seemed similarly indicated, had we been able to diagnose the presence of an abdominal and a thoracic aneurism, or of either, it is questionable whether it would have been attempted. The application of the abdominal tourniquet which was used to check the repeated hæmorrhages, was not unattended with considerable risk; it might have caused rupture of the abdominal aneurism and fatal internal hæmorrhage, such as ultimately took place in the thorax, though the former might not have been so very rapidly fatal.

Mr. H. E. Clark said that he had seen the case at the Infirmary Dispensary, and had diagnosed the aneurism, and had seen Dr. Morton perform the first operation. When he returned again he complained of his chest, and he (Mr. Clark) suggested that it was probable that he had a thoracic aneurism. An examination by the stethoscope brought out nothing definite. The propriety of performing the second operation was also discussed, in view of the fact that the increase of blood pressure might have the effect of bursting the aneurism in the thorax, if such existed. But the fact that the latter did not burst till a considerable time after the operation, seemed to prove that the fatal result was not due to the effects of the operation. In regard to the abdominal aneurism, it was a matter of difficulty, in performing the operation, to find the exact position in which to apply the abdominal tourniquet. Ultimately the bleeding was controlled by direct pressure over the wound. One could see the cause for that now.

GLASGOW PATHOLOGICAL AND CLINICAL SOCIETY.

SESSION 1879–80.

MEETING II.—28th OCTOBER, 1879.

DR. ALEXANDER ROBERTSON, *President, in the Chair.*

The SECRETARY showed for DR. J. A. ADAMS a specimen of SIMPLE MUCOUS POLYPUS OF THE STOMACH, taken from a subject in the Anatomical Laboratory of the University. There was no history of the case during life, and the death had been certified as "Bronchitis." The growth projected from the posterior wall of the stomach, close to the pylorus. It was about one inch and a half in length, and attached by a narrow pedicle.

Dr. Adams said that, while polypi of the mucous surfaces were sufficiently common, it would seem as if their presence in the stomach was of rare occurrence, for, excepting some vague references, he could only find a single instance recorded with satisfactory detail. This was a case reported by Dr. Quain in the *London Pathological Society Transactions*, vol. viii, p. 219. The patient, a young woman, had suffered from distension of the stomach, chiefly after meals, associated with pain. In the course of six weeks she lost a stone and a half in weight. When going to her usual employment, she felt suddenly sick and vomited a tumour about the size of a small walnut; it was very firm and vascular, and microscopic examination showed it to be a simple mucous polypus. For a week after its expulsion she had great soreness in the epigastrium and want of appetite, but she gradually recovered.

Dr. Macewen showed, as a fresh specimen, a TUBERCULAR TESTICLE removed from a patient 15 years of age, who for some years had an indolent testicular enlargement, which four months ago took on, without apparent cause, an acute inflammatory action ending in abscess and *hernia testis.* The protrusion of the testicle was pronounced, and the scrotum was closely adherent, not only round the margins of the hernia, but also over the body of the gland. There were several sinuses in the skin passing down to cavities in the gland. The epididymis and the cord also contained hard glandular masses. Castration was performed. On section the testicle was found to contain a large sacculated abscess in the centre, and round this large abscess there were three or four tubercular masses in various stages of disintegration. In the epididymis and the cord were found masses of tubercle, in some instances containing pus in their centre.

The specimen was interesting, not from its rarity, but from its being so characteristic of the disease it represented.

Dr. Hector Cameron showed a patient, a man, with UNUNITED FRACTURE OF THE LEFT HUMERUS, the false joint being unusually lax. There had also been injury of the musculo-spiral nerve, and the parts which it supplied were completely paralysed. Nevertheless, the patient's arm is by no means useless. By muscular action he shortens the upper arm so as to make the fragments overlap, and he then can lift a chair or even objects as heavy as 2 cwt. Dr. Cameron thought that this case supplied a hint that, in excision of the elbow, the joint should be pretty free, and in this light he looked upon subperiosteal excision of the elbow as a failure so far as movement went.

Dr. Barr showed the LEFT TEMPORAL BONE OF A YOUNG MAN, 17 years of age, who died on the 20th September last, after a fortnight's illness. He had suffered from a purulent discharge from the left ear for about two years previous to his death; the discharge had generally an offensive odour, and was sometimes attended by pain. Dr. Barr's notes of the case are as follows:—

"I was requested to see the patient nine days before his death in order to treat the running ear, when I found him complaining of pain in the left side of the forehead, and of a peculiar sensation in the head (he said he felt as if he had two heads), while, instead of being bright and lively as was his natural disposition, he was now languid and drowsy, and inclined only to lie at rest with the eyes shut. At the beginning of his illness he vomited three or four times, but the vomiting was not severe or persistent. There had also been distinct aphasia for a week or so before I saw him. He failed to remember his own name, or the name of the street in which he resided; while he could only indicate Partick, a place which he visited daily when well, by pointing and saying 'that place a little bit out of Glasgow.' Noting these symptoms, and suspicious of brain complication, I confined myself simply to an examination of the ear, when I found a polypus occupying the tympanic cavity, and the tympanic membrane nearly destroyed. Two days before death, while in the act of sitting up to eat something, the patient trembled all over and became unconscious, this unconsciousness lasting two hours. The day following, I called Dr. Finlayson in consultation; immediately after we were done with the examination, the patient had a distinct epileptic seizure. In a short time he partially recovered consciousness, and was able to swallow, but rarely spoke till the day after, when he died.

Post-mortem by Dr. Coats two days after death.—On opening the skull, the brain exhaled a very remarkable putrid, sour odour. In removing the brain, the left temporo-sphenoidal lobe was found to be adherent to the base of the skull by its inferior surface. On this surface the brain had a dark blue colour, and the whole inferior part of the temporo-sphenoidal lobe felt pulpy, while the convolutions were seen to be flattened or spread out, so as to appear as if partially obliterated. On cutting into this lobe an abscess was found. Its contents were a dirty, greenish, decomposing pus, of a glairy consistence, and exhaling an exceedingly offensive, almost gangrenous, odour. The abscess was lined by a layer of soft consistence, and of a dark bluish colour. The part specially occupied by the abscess was the external and inferior portions of the temporo-sphenoidal lobe, but it may be said that the greater part of the lobe was involved, except its extreme posterior portion. Over the temporal bone the dura mater was adherent and of a blue colour. At one place it had become pulpy and was partially destroyed, so that a probe could be passed directly into the petrous portion of the temporal bone. There were two pretty large openings caused by caries in the temporal bone, one in the roof of the tympanum, and the other in the groove for the lateral sinus; this latter opening communicated with the mastoid cells. At the opening in the groove for the lateral sinus, the walls of the venous sinus were much thickened—a circumstance which probably prevented fatal hæmorrhage into the middle ear.

DR. RENTON read notes of, and showed the HEART, KIDNEYS WITH SUPRA-RENAL CAPSULES, AND RIGHT PATELLA, from a case of Addison's disease, occurring in a girl aged 13. So far as could be ascertained, the disease lasted nine months, and the patient presented fairly typical symptoms. She had a phthisical family history, and had suffered from strumous disease of eyes and ears after the exanthemata—scarlet fever and measles. Her skin was deeply bronzed, more especially over the extensor aspects of the fingers and toes, the face, neck, and abdomen; in the epigastric region a blister had been applied while she was under the care of Dr. Vass, of Tain, who supplied important facts as to her condition while there, and the mark of the vesicant was specially pigmented. The darkness was not so striking over the nipples, axillæ, or groins, but on the lips and inside of the cheeks distinct black points were observed, and these had increased while she was under Dr. R.'s care. Temperature normal. Pulse weak. Mitral systolic murmur existed, and slight hypertrophy of the heart. The murmur completely disappeared during one month, when the urgency of the symptoms also diminished; but, contrary to the description given of the disease in Dr. Greenhow's able work, the pigmentation went on increasing although the patient seemed to be daily improving. She was at times annoyed by headache, sickness, vomiting, faintness, palpitation, and nervousness. Dr. Finlayson saw the patient in consultation, and confirmed the diagnosis as to the probability of Addison's disease. The patient died on 1st August, and Dr. Foulis made a *post-mortem* examination which revealed general lymphatic glandular disease, with the characteristic degeneration of the supra-renal capsules and the sympathetic ganglia, as described by Dr. Greenhow. The heart was slightly hypertrophied, and the mitral valve thickened. On sawing through femur and patella no degeneration of the medulla was found.

DR. WOOD SMITH read notes of a SUPPOSED CASE OF ADDISON'S DISEASE.—Robt. M'L., aged 60, a zinc worker, admitted to Ward VII of Glasgow Royal Infirmary, on 29th September, 1879. He complained of vomiting immediately after he swallowed his food. He also spoke of a dull constant pain, in the epigastric region, immediately behind the apex of the ensiform cartilage. On examination the skin of the body and limbs showed large irregular dark brown patches. These patches, which were best marked on the anterior surface of the abdomen and thighs, were in some places well defined at the edges, but at others the colour seemed to fade imperceptibly into that of the surrounding skin. Some of these patches had also spots of silvery-white colour. The mucous membrane of the mouth was not discoloured. He appeared to be much emaciated. The respiratory system was found to be normal. The heart sounds were irregular, and the second sound was rough and accentuated. Pulse was 64. His temperature, on admission, was 97·2° F. He complained occasionally of a chilly, creeping sensation, which he said was constantly present.

If he took food, whether solid or liquid, he never retained it for more than a few seconds, and it came back in exactly the same condition it was in when swallowed.

This state of affairs, the patient stated, had lasted a month, and during that time he had lost a deal of flesh. The dark brown patches had been present for nearly twenty years. Their appearance had not been attended by any illness, and, in fact, he remained a strong healthy man until the latter end of August last, when the vomiting commenced.

He died on the 8th October.

Two days later a *post-mortem* was made by *Dr. Foulis*, the notes of which are as follows:—" The body is much emaciated. The thighs, arms, lower part of belly, axillæ, feet, head, and neck, present a dingy brown discoloration, disposed in irregular meandering patches, on which appear a number of smaller patches of nearly pure white colour. There are no white patches on the head and neck. The mucous membrane of the mouth does not seem to be discoloured. On opening the body, the serous membranes appear to be free from inflammation; the small intestines, however, have a dirty maroon colour, as if from *post-mortem* discoloration. The lungs are slightly emphysematous, but are otherwise normal. Heart is normal in size and structure. On opening the abdomen, the first thing noticed is that there is a hard mass at the cardiac orifice of the stomach, extending to the gullet, but not into it. On opening the stomach, this mass presents a dull red, and partly ulcerated appearance. Pancreas does not appear to be involved in the hard mass, but two or three lymphatic glands in the vicinity are hard and slightly enlarged. No other cancer can be detected. The pylorus and bowels are normal; liver, gall-ducts, and spleen, are normal. Supra-renal capsules do not appear to the naked eye to be enlarged or thickened. Head not allowed to be examined.

"The cancerous mass in the stomach is 2½ inches in diameter, and is a circular patch with the cardiac orifice in the middle, and in places is half-an-inch thick. It is of a dull red colour, mottled with lighter tints, and the surface is here and there eroded. Its edges are raised, smooth, nodular, and firm.

"On minute examination and dissection a considerable cicatricial thickening is found in the left solar plexus, matting the parts together. The right semi-lunar ganglion is also thickened, and there are hard nodules of fibrous consistence all round the left renal vein. The supra-renal capsules, however, do not seem to be directly involved, and are not thickened or enlarged."

Dr. Foulis commented on the appearances found at the *post-mortem* examination, and observed that, with reference to the case which had been under the charge of Dr. Wood Smith, he saw no reason for not calling it Addison's disease. In Eulenburg and Guttmann's work on the "Sympathetic System" (translated by Dr. Napier), a case is quoted in which Virchow had found, "in an individual who had suffered from cancer of the œsophagus and bronzed skin, a hyperplastic hæmorrhagic swelling of the supra-renal capsules, accompanied by thickening of the solar plexus." This was closely analogous to Dr. Wood Smith's case; and both cases might very well be regarded as varieties of Addison's disease. He placed on the table minute dissections of *normal* parts, to show the natural relations and thickness of the solar plexus, semi-lunar ganglia, kidneys, and supra-renal capsules. These were mounted upon sheets of blue glass, with black threads to stretch and hold the parts in position, so that the white tissues were clearly seen. He then showed similarly minute dissections of the solar plexus and capsules in the two cases before the Society. It was at once apparent that the nerve sheaths, in Dr. Renton's case, were thickened and matted together; and that, in Dr. Wood Smith's case, the lower end of the left supra-renal capsule, and the lower part of the solar plexus were involved in a fibrous mass of apparently old date, which embraced also the tissues down to the left ureter. This ureter was stenosed in fact by the thickened tissue, and some dilatation of the renal pelvis had resulted in consequence. He also showed, under six microscopes, sections of normal supra-renal bodies, and sections in cases of Addison's disease, one of them being from Dr. Renton's case. These showed that the normal structure of the supra-renal body was replaced by a dense tissue, composed of small round cells, nuclei, and fatty debris. In no part of the dissections or microscopic sections had he found evidence of tubercular disease, if the word tubercle were understood as meaning miliary tubercle; nor did he regard the lesion as related to miliary tubercle in any way.

Dr. Finlayson remarked on the absence of marked pigmentation at the umbilicus and nipples in Dr. Renton's case. Some held that if there was no extra pigmentation there the discoloration ceased to be typical. In Dr. Renton's case he thought the discoloration moderately typical even in the absence of it at the points indicated. The patches in the mouth were present when he saw the patient, and they remained after death. Another point of interest was the cardiac lesion. There were evidences of hypertrophy of the left ventricle, associated with a murmur of mitral origin. A patent foramen ovale existed, but he did not think it could account for the murmur. Other points that made him waver in a diagnosis were the patient's being so young, and a female. Most of the recorded cases were in young male adults. A very striking circumstance in the case was the improvement under treatment, but with a gradually increasing pigmentation. As a rule, when treatment was of any avail, the pigmentation became stationary or faded somewhat. He thought that in Addison's disease there were two important elements—viz., a constitutional tendency closely allied to the strumous or scrofulous, and a local lesion in the supra-renal capsules acting through the nerves. Dr. Greenhow said the analogies of Addison's disease with tubercular affections were very pronounced.

Dr. Robertson said that some were still sceptical as to the uniform association of Addison's disease with disease of the supra-renal capsules, but he thought there must be some connection between them. He had a patient, an epileptic, two or three years ago, with bronzing of the skin, but under treatment she improved, and is now fairly well, and her skin much less dark. Perhaps in her case there were some changes of minor character not leading to the fully developed disease. She presented at least many symptoms of it.

GLASGOW SOUTHERN MEDICAL SOCIETY.

Session 1879-80.

Meeting I.—29th October, 1879.

Mr. Niven, *President, in the Chair.*

Professor M'Call Anderson read a paper entitled—FURTHER OBSERVATIONS ON THE CURABILITY OF ATTACKS OF GALLOPING CONSUMPTION, WITH AN ILLUSTRATIVE CASE. In introducing the subject, Dr. Anderson referred to the cases he had brought under the Society's notice two or three years ago, and observed that, while it was impossible to doubt the recoveries, some of his professional brethren were sceptical as to the accuracy of the diagnosis in these cases, suggesting that they should rather be regarded as instances of typhoid fever or simple acute pneumonia. He himself adhered to his former opinion, in which he was supported by all who had had the opportunity of watching the cases while they were under treatment. He made a distinction between tubercular and non-tubercular cases of acute phthisis, and maintained that the latter are probably the more necessarily fatal, for the reason that while in the former we have to deal (except the lung be absolutely stuffed with tubercle) simply with a disease characterised by congestion, consolidation, and breaking up of a *portion* of the lung tissue, we have in non-tubercular phthisis to combat a wide-spread inflammatory affection of the lung, tending to rapid disintegration of the pulmonary tissue involved. Clinically, the distinction is generally very difficult to make, if we may judge from the discrepancies discoverable in the accounts given by our standard authorities, of the two forms of the disease. From a clinical point of view, however, he was not greatly concerned in determining whether the disease is tubercular or not. Dr. Anderson then read the details of a fresh case of galloping consumption, of which the following is a summary:—A. B., a carter, æt. 25; family history good; has always been a healthy man, and uniformly temperate in his habits. His illness began 4 weeks before admission to the Infirmary, with a feeling of sickness, cough, and expectoration of blood, which was followed next day by severe pain on the right side of the chest. In the course of a week slight diarrhœa set in, the bowels being moved as frequently as 5 times in 24 hours; the subsequent progress of the case was also occasionally interrupted by a tendency to diarrhœa manifesting itself. Motions thin and yellowish, but contained no blood. On admission (20th May 1879), patient was greatly exhausted and emaciated, with a hectic flush on each cheek, and a hot and dry skin; he suffered also from profuse night sweats; temperature 103° F. Abdomen not distended; no gurgling or pain in either iliac region; no eruption. Pulse 110, and feeble. Respirations 40 per minute, and shallow; cough slight and occasional; expectoration scanty, and composed of clear mucus. Physical examination—At the base of the right lung, slight bulging and deficient movement, marked percussion-dulness, feeble respiratory murmur, diminished vocal fremitus and resonance (slight pleuritic effusion); at left apex, flattening, deficient movement, dull percussion sound, increased vocal fremitus and resonance, and moist, subcrepitant râles mixed now and then with dry râles; at left base, dull percussion sound, increased vocal fremitus and resonance, and coarse bubbling râles (signs of commencing softening). Over rest of lung, want of resonance, and mixture of dry and moist (subcrepitant) râles. No evidence of disease in any other organ. The diagnosis made was *acute phthisis*, complicated with pleurisy and diarrhœa; this was based on the history of the case (especially the occurrence of hæmoptysis at the outset), the high and continued fever, the perversion of the pulse-respiratory ratio (110 : 40 :: 2¾ : 1), and the physical signs. The pyrexia and diarrhœa were suggestive of typhoid fever, but this view was negatived by the absence of other abdominal symptoms and of the eruption. Was it tubercular or non-tubercular? It was probably acute catarrhal pneumonia at the outset, which might subsequently be complicated by tubercles. Treatment—fluid food (milk, &c.) every hour; every 4 hours a pill containing quinine, gr. i.; opium, gr. ½; digitalis, gr. ½, the quantity of opium being varied according to the state of the bowels; iced cloths were diligently applied to the abdomen till the temperature was brought below 100° F.; quinine in 10 grain doses was given occasionally, when the temperature tended to rise; atropine was used hypodermically, when necessary to control the sweating; the body was at times sponged with vinegar and water.

The patient's improvement under this treatment was steady and continuous. On 10th June it was recorded that his appetite and general condition were much improved; bowels not moved for 4 days; pulse 80, and of fair strength; respirations 24; temperature during preceding 24 hours never up to 100° F.; cough less; expectoration scanty, and only clear mucus. Coarse râles at left base gone; replaced by râles partly musical and partly moist. The pill had had a markedly diuretic effect. On 2nd July it is noted that the expectoration is still present, but slight; digestive organs natural, but motions still inclined to looseness; temperature normal; pulse 86, and of good strength; respirations 20-24. All râles have disappeared from left side of chest, except occasionally musical rhonchi posteriorly. Diet good, including beef steaks. *5th July.*—Itchy, pustular eruption on arms and face, probably from atropine. *1st August.*—Diarrhœa and sweats gone; pulse 84; respirations 18; expectoration scanty—muco-purulent; râles have completely disappeared from chest; percussion-dulness less pronounced; there is still slight pleuritic effusion at right base. Takes cod liver oil, ʒvi. per day. *14th August.*—Percussion-dulness very decidedly diminished. *29th August.*—Patient practically convalescent; no cough or expectoration; temperature normal; respirations 16; no trace of râle in any part of the chest; pleuritic effusion at right base steadily diminishing; at left base the respiratory murmur is still somewhat feeble, and in the left infraclavicular region there remain flattening, defective resonance, and harsh breathing; there is also some dulness in the suprascapular region. From *10th August* to *6th October* patient gained 8½ lbs. in weight.

Dr. John Gardner related a case somewhat similar to the foregoing. His patient was a female, aged 22. It was at first doubtful whether she was not suffering from typhoid fever, but, after consultation with Professor M'Call Anderson, the conclusion come to was that the case was one of galloping consumption. Both apices were dull to percussion, but there were no tubular râles; pulse, taken every night, about 120; temperature varied from 99° in the morning to 104° in the evening; emaciation was rapid; night-sweats profuse; no diarrhœa or other abdominal symptoms. Iced cloths were used with decidedly beneficial effect, the temperature being generally reduced from 104° to 99°, on one occasion even to

98°. Quinine was also used to the extent ultimately of 90 grains per day; the fever was certainly lessened by this means, but the reduction in temperature was not sufficient to encourage the further employment of the remedy. Atropine injections were also given, with a certain measure of success. After living about six months comfortably, this patient was seized with severe diarrhœa, to which she succumbed in two days.

Mr. Nairne said that there was nothing special in the anti-pyretic treatment described above; being suggested and guided by the symptoms of fever present, it was such as would commend itself to most practitioners in like circumstances. The point of most importance raised was concerning the diagnosis, and he agreed with Professor Anderson in regarding the case under consideration as one of acute phthisis.

Dr. R. W. Forrest referred to the chart of temperature, pulse, and respiration, as conclusive proof of the tubercular nature of the case; the symptoms observed, and the physical signs, all pointed in the same direction.

Mr. T. F. Gilmour related a case of galloping consumption which presented many points of similarity to the case read that evening; it also terminated equally favourably, the system of treatment advised by Professor Anderson having been faithfully carried out.

Mr. M'Millan spoke very highly of the service the pill of quinine, digitalis, and opium had been to him in the treatment of many phthisical cases.

Professor Anderson brought the discussion to a close with a few additional remarks on treatment. He said that such cases demanded the very best of nursing; the minutest details must be carefully attended to. Each remedy must be employed with a particular end in view. The atropine not only diminishes perspiration, but also lessens discharge from the lungs and lowers the temperature. Neither the application of the iced cloths nor the administration of the anti-pyretic pill already mentioned could be regarded as the essential part of this system of treatment; Dr. A. has always found it necessary to use *both* means before any very marked reduction in temperature could be effected.

MEDICAL ITEMS.

UNDER THE DIRECTION OF

ALEX. NAPIER, M.D.

Pathology of Infantile Paralysis.—According to the observations of MM. Damaschino & Royer, recorded at the recent Congress in Amsterdam, the lesions found in the spinal paralysis of infancy, and in progressive muscular atrophy, consist of centres of inflammatory softening, seated in the anterior cornua of the gray substance, and extending almost all the length of the lumbar cord. The lesion is most marked on the right side. At the level of the dorsal region there were no distinct centres of softening, but there were found some granular bodies accumulated round the vessels. The atrophy of the cells, very considerable in the lumbar region, was found also in some other parts of the cord, and showed a constant connection with the dimensions of the centres, and the variable degree of the vascular lesions. The atrophy of the white antero-lateral bundles was very plain, and there was, at this level, an abundant accumulation of conjunctive nuclei; atrophy equally well pronounced of the anterior roots. The muscular lesions consisted chiefly in diminution of the volume of the primary bundles. A great number of muscles were the seat of an abundant deposit of fat cells interposed between the muscular elements.—*La France Médicale. No. 80.*—G. S. M.

Therapeutical Effects of Iron, Condurango, and Sulphate of Zinc Administered Hypodermically.—M. L. Wyschinski has tried, at the clinique of Professor Laschkewitsch, at Charkhow, a number of new remedies, and has communicated, in a paper to the Medical Society in that town, the results at which he has arrived.

Subcutaneous Injection of Iron.—Professor Huguenin employed the citro-ammoniacal pyrophosphate of iron in an aqueous solution, adding a little albumen to diminish the local irritation. A dose, containing 3 grains of the medicine, was introduced under the skin. In general, everything went well, but, in two or three cases, a small abscess formed in the neighbourhood. The effect was extremely satisfactory. A patient with carcinoma of the stomach, who was so feeble that he could not leave his bed, was able to rise and walk after three or four injections. Another patient with anæmia from hæmatemesis due to a simple ulcer of the stomach, gained 3½ livres after six injections. In a case of cardiac anasarca, three injections sufficed to increase the quantity of the urine and to diminish the œdema. In an anæmic patient who took hysterical fits, the attacks diminished in number and intensity five days after the injections were commenced. There has been an increase of strength and improvement of general health in all the cases.

Bark of Condurango.—The author gives the results he has obtained in six cases of carcinoma (two of œsophagus and four of stomach). In one case the vomiting and pain disappeared, in another there was no change, while in the other four there was a notable improvement.

Sulphate of Zinc has been employed for the last three or four years at the Clinique of Laschkewitsch, in doses of ¼ grain in a convenient solution. Where the pain of injecting was severe half a grain of codeia was given at the same time. The author has seen this treatment applied in a number of cases, but he insists particularly upon the case of a young man of 16 years, who, since his tenth year, had suffered from anorexia, eructation, and vomiting. For five months previously he had vomited after each meal at an interval varying from ten minutes to one hour. The feebleness and emaciation were extreme. There was slight dilatation of the stomach. Ten days after treatment was begun the vomiting became less frequent and violent; the appetite revived at the end of five or six days more, and in a short time he was able to leave the hospital. This medicine renders equal service in carcinoma of the stomach by acting upon the concomitant catarrh. The author thinks that its effects are not due to its astringent properties, but rather to an influence which it exerts upon the pneumogastric nerve.—*Lyon Médical. 31st August, 1879.* J. M.

Caution with regard to Pilocarpine.—Dr. Jenkins, of New York, calls attention to a new objection to the hypodermic injection of pilocarpine—the flooding of the lungs by an excessive bronchial secretion. Prof. T. G. Thomas records a similar experience; in his case, one of uræmic coma following confinement, jaborandi was tried by the rectum, the result being a profuse bronchorrhœa, which was at first attributed to an alteration in the circulation.—(*Med. and Surg. Reporter; 15th November, 1879.*)—M. Sanger reports (*Arch. of Gyn.*, xiv, p. 412) a case of eclampsia, and quotes two which had been communicated to him by professional friends, in which the injection of pilocarpine was followed by very severe acute œdema of the lungs. M. Sanger's own case was treated with atropine, administered hypodermically; she had no more convulsions, and eventually recovered. The other two patients died, one of them twelve hours after the injection. Dr. S. ascribes the suffocative symptoms to inability to expectorate the enormous quantity of mucus poured into the bronchi, to œdema of the lungs, enfeeblement of the heart, and partial closure of the larynx by the sinking backwards of the enlarged tongue. In all three instances the pilocarpine arrested the convulsions; in the two fatal cases, however, reflex irritability was almost completely abolished, and the patients were so exhausted as to be unable to withstand the depressing effects of the pilocarpine. In Sanger's opinion pilocarpine, the oxytoxic action of which he fully recognises, should be given at the outset of the seizure, and before the development of coma.—*Centralblatt f. die Med. Wissensch. 22nd November, 1879.*

[We are able to add to the foregoing list another case in which the injection of pilocarpine was followed by symptoms of grave pulmonary disorder. Our patient, a child suffering from scarlatinal dropsy complicated by uræmic symptoms, progressed favourably under the influence of pilocarpine till he had received the fourth injection, when he was suddenly seized with intense dyspnœa and frequent cough; the vessels of the head and face were very full, and the superficial veins of the chest and abdomen were so loaded as to give the surface a dull, dusky appearance. The percussion sound was clear at all parts of the chest; r. m. was everywhere loud and harsh, and accompanied by abundant coarse and fine bubbling râles. The symptoms gradually subsided under the free action of diuretics, and the patient ultimately recovered.—A. N.]

Treatment of Post Partum Hæmorrhage by Hot Water Injections.—We extract the following from the "Annual Report of the Rotunda Hospital," by Dr. Atthill, published in the *Dublin Journal of Medical Science*, December, 1879:—

"*Post Partum Hæmorrhage.*—The use of hot water in the treatment of this complication was very frequently employed both in the hospital and extern maternity, and has proved eminently satisfactory. It has, indeed, much to recommend it, for not only is it a powerful hæmostatic and excitant of uterine contraction, but it is also a general stimulant. If used with ordinary care it is not only harmless but beneficial, by thoroughly cleansing the uterus from clots, portions of membrane, &c., which may have been left in its cavity. It will not, in Dr. Atthill's opinion, be found altogether to displace the use either of cold water or of the perchloride of iron, but rather to be applicable to a distinct class of cases in which the former of those remedies would be unsuitable, and the latter unnecessary."

"The method of carrying out the practice is exceedingly simple. An ordinary syphon syringe is the only instrument required, though we now use one with a long vulcanite nozzle, specially constructed for vaginal and intra-uterine injection. This is carried up to the fundus, and with the usual precautions against injecting air and securing a free return, we inject water as hot as can be conveniently borne by the hand, *i. e.*, about 112° F., in a full stream into the cavity, continuing thus until a good contraction is secured, and the water returns quite clear and colourless." The following are some of the results of our experience in the use of hot water:—

1st. In cases of sudden and violent hæmorrhage in a strong and plethoric woman, it is better first to use cold.

2nd. Where, from the prolonged or injudicious use of cold, the patient is found shivering and depressed, the beneficial effect of injecting hot water is rapid and remarkable.

3rd. In nervous, depressed, and anæmic women, hot water may at once be injected without previously using cold.

4th. In cases of abortion where, from uterine inertia, the ovum, although separated from the uterine wall, is wholly or in part retained, the injection of hot water is generally followed by most satisfactory results.

5th. Where the injection of the perchloride of iron is considered necessary, previous injection of hot water clears the uterus of clots, &c., permitting the fluid to come directly in contact with the bleeding surface, and lessening the chance of septic absorption.—J. W. A.

Rapid Cure of Coryza by Eucalyptus Globulus.—R. Rudolph (*Gazetta Medica Ital.*), reports the following interesting observation made on himself:—Being seized with the most intense coryza, he happened to chew one or two twigs of the eucalyptus, at the same time swallowing the saliva secreted, which had a bitter and aromatic flavour. To his great surprise he found that, in the course of half-an-hour, the nasal catarrh had disappeared. Some days later he was seized with another attack from a fresh exposure to cold, when the same treatment was followed by an equally fortunate result. He then prescribed the remedy to several of his patients, all of whom were benefitted in the same way. The writer believes that this treatment is only suitable in acute cases.—*Gazette des Hôpitaux. 15th November, 1879.*

J. W. A.

The Cinchona Cure for Drunkenness.—The following is the testimony of Dr. A. G. Hayne, Superintendent of the Home for Inebriates, San Francisco, regarding the value of this "cure." "In no single instance have I found it to possess the slightest power in disgusting the patient with liquor, or in any way diminishing the craving or appetite for intoxicating drinks. On the contrary, it has been freely confessed to me that the anticipation and pleasure of a drink remained as strong as ever."—*Med. and Surg. Reporter. 18th October, 1879.*

Successful Case of Excision of the Uterus along with a Fibrous Tumour.—This operation was performed by M. Tillaux on a patient 35 years of age, whose life was endangered by uncontrollable hæmorrhages. An incision, 13 centim. long, was made in the middle line. The tumour (the adhesions of which were separated by the finger) was drawn outwards, and after a ligature had been applied, was removed, the pedicle being fixed to the inferior angle of the abdominal wound till hæmorrhage ceased. The operation was performed antiseptically. There was no peritonitis, nor other unfavourable symptom. A short time after the operation the patient menstruated, only a little less freely than usual. The ovaries had been preserved, and the stump of the uterine neck remained in the vagina. The tumour weighed 2 kilogs. (4½ lbs.) M. Tillaux would apply the name hysterectomy to this operation, and he thinks the indications for its performance are—1st. Uncontrollable hæmorrhage menacing the life of the patient. 2nd. Pain so intolerable as to render life miserable. 3rd. Intestinal obstruction from uterine tumour.

M. Duplay gives some statistics of the operations performed up to last year, few of which had been done in France.

1st. Laparotomy for fibroma.

(*a.*) Excision of the fibroma. Tumours subperitoneal and more or less pediculated: 17 cases, 5 cures, 12 deaths, or 70·5 per cent of deaths.

(*b.*) Excision of the whole uterus: 55 cases, 23 cures, and 32 deaths, or 58 per cent mortality.

2nd. Laparotomy for cysto-fibroma: 41 cases, 22 cures, 19 deaths, or 46·4 per cent mortality.

Taking the two together we have 113 cases, with 44·2 per cent cures and 55·8 per cent mortality.—*La France Médicale. Nos. 84 and 86.*—G. S. M.

Removal of a healthy Ovary in a case in which there was complete absence of the Vagina.—At the meeting of the Surgical Association of Germany, held recently at Berlin, Professor v. Langenbeck showed a woman, aged 21 years, in whom he had performed the operation of removal of a healthy ovary, and in whom there was complete absence of the vagina. The history of the case is, that menstruation commenced when she was 14 years of age, and had always been accompanied by severe pain, leading sometimes to epileptiform convulsions. The menstrual fluid escaped from the uterus into the bladder by a very narrow channel, and then made its exit by the urethra. An examination showed the uterus to be undeveloped, while there was an absence of the left ovary. Under the circumstances, Professor v. Langenbeck decided to remove the right ovary, which was done by an incision, 10 centimetres in length, on the right side. The pedicle of the ovary was ligatured with cat-gut, and the wound in the abdominal wall closed with sutures. The patient made a good recovery. One remarkable circumstance connected with the case was, that five days after the operation menstruation occurred, although one ovary was congenitally absent and the other had been removed. v. Langenbeck recommends this procedure in all similar cases. *Le Progrès Médical. 30th August, 1879.*—G. T. B.

Treatment of Prolapse of the Rectum by Injections of Ergotine.—Dr. Vidal has succeeded in curing a prolapse of the rectum, of more than eight years' standing, by employing injections of ergotine. He has also treated an old standing case in a woman, and almost completely reduced the prolapse by three injections. The contractions provoked by the ergotine extend as far as the bladder, producing spasm of the neck and dysuria.—*Lyon Médical. 21st September, 1879.* —J. M.

Glycerine in the Treatment of Hæmorrhoids.—*External* piles, when active and painful, should be treated in the following way:—the parts should be bathed thoroughly with water as warm as can be borne, Castile soap being freely used; afterwards, equal parts of compound gall ointment and extract of belladonna should be applied. The operation must be repeated every three or four hours till the pain subsides. The speediest relief, however, is obtained by slitting up the tumour and evacuating the clot which it contains. For *internal* piles a dessertspoonful of glycerine should be given twice a day. This has no laxative effect on the bowels, as might at first be expected; it tends rather to produce constipation, and necessitates the use of aperients, such as a powder of sulphur and sulphate of potash, ten grains of each, or the following pill at bedtime:—

℞	Hydrarg. Bichlor., - - -	gr. $\frac{1}{30}$
	Strychniæ, - - - - -	gr. $\frac{1}{30}$
	Ext. Belladon., - - - -	gr. $\frac{1}{3}$
	Quin. Disulph., - - - -	gr. i.
	Ext. Aloes Barbad., - - -	gr. $\frac{3}{4}$ Misce.

Aloes, when combined as above, does not increase the hæmorrhoidal trouble.

The parts may also be bathed with the following lotion:—

℞	Solution of Acetate of lead, - -	ʒ ii.
	Fresh Milk, - - - -	℥ ii.
	Warm Water, - - - -	℥ i. ɱ.

When the hæmorrhoids are inflamed, bathing with warm water is agreeable and soothing; but when they are in a chronic state the free use of cold water is a source of greater comfort and will greatly lessen the frequency of the attacks. The parts, including the partially prolapsed lower portion of the rectum, should be carefully cleansed with a cold wet sponge the moment *after* the motion has passed.—Dr. Young in *The Practitioner. October, 1879.*

Treatment of Port Wine Mark by Oblique Linear Scarification.—The process of *vertical* scarification, adopted by Mr. Balmanno Squire for the "obliteration of port wine mark without scar," cuts off definitely all lateral supply of blood to the cavernous vascular structure of which the mark mainly consists, but it does not cut off the abnormal supply of blood from below, from the subcutaneous vascular network; it is therefore a somewhat tedious method of cure. By making the incisions *obliquely*, however, Mr. Squire finds that such marks may be removed in two sittings. The skin should be frozen with the ether spray, and then rapidly cut into a series of minute squares with a scalpel, the instrument being made to enter the skin at an angle of 45° with the surface, so as to divide the skin into a number of slanting flaps. The second operation is exactly like the first, but the knife must be made to slope in the opposite direction. Bleeding is easily controlled by pressure. Mr. Squire is at present engaged in devising an instrument with many blades, for the prompt performance of the operation.—*Med. Press and Circular. 26th November, 1879.*

Treatment of Lupus by Linear Scarification.—M. Vidal speaks very highly of this method of treatment, which he also claims to have been the first to introduce, in cases of lupus. As early as the end of 1874 he had begun to make a comparative trial of scarification, scraping with Volkmann's spoons, caustics, &c., in this disease, and now, having studied the effects of all these systems of treatment in more than 120 cases, he gives the first place to simple scarification, performed without preliminary scraping or subsequent application of caustics. With a fine knife he makes a number of parallel incisions, as close as possible to each other, and then crosses them with a second series of similar incisions. The knife must be carried quite to the bottom of the lupous deposit, while the edges of the patches, the parts at which the diseased action extends, must be scarified with particular care, as it is of importance that the vitality of this zone of invasion should, as far as possible, be modified by the traumatic inflammation set up by the operation. Five or six scarifications are necessary, at intervals of six or eight days. Scraping is superior to cauterisation, but it destroys too much of the connective tissue, which should be preserved to take part in the formation of the cicatrix; but scarification yields even more satisfactory results, the cicatrix so obtained being smooth, white, soft, level with the rest of the surface, and exactly like that which follows spontaneous cure. M. Vidal's conclusions are :—

1. The external treatment of lupus by scarification is the least painful, the most sure, the least likely to be followed by relapses, and gives by far the best results, particularly as regards the appearance of the cicatrix.

2. Applicable in every variety of lupus, of remarkable efficacy in the tubercular, ulcerative, and non-ulcerative forms, even in lupus vorax, it is less useful in lupus erythematosus, and is least effective of all in cases of acneous lupus.—*Bull. de l'Acad. de Méd.* T. viii. No. 46.

Books, Pamphlets, &c., Received.

Atlas of Skin Diseases. By Dr. Louis A. Duhring. Parts I–VI. Philadelphia: T. B. Lippincott & Co. 1876-1879.

Notes on Fever Nursing. By James W. Allan, M.B., Superintendent and Physician, City of Glasgow Fever Hospital, Belvidere. London: J. & A. Churchill. 1879.

Clinical Lectures on the Diseases of Women, delivered in St. Bartholomew's Hospital. By J. Matthews Duncan, M.D., LL.D., &c. London: J. & A. Churchill. 1879.

A Handbook of the Theory and Practice of Medicine. By Fred. Y. Roberts, M.D., B.Sc. Fourth edition. London: H. K. Lewis. 1880.

Eyeball Tension: its Effects on the Sight and its Treatment. By W. Spencer Watson, F.R.C.S., Eng. With woodcuts and illustrative cases. London: H. K. Lewis. 1879.

Sanitary Fallacies: an Address delivered before the Congress of the Sanitary Institute of Great Britain. By W. H. Corfield. London: H. K. Lewis. 1879.

Syllabus of a Course of Lectures on Physiology. By J. Burdon Sanderson, LL.D., F.R.S. Second edition. London: H. K. Lewis. 1879.

Skin Diseases, including their Definition, Symptoms, Diagnosis, Prognosis, Morbid Anatomy, and Treatment. By Malcolm Morris. With illustrations. London: Smith, Elder & Co. 1879.

Atlas of Histology. By E. Klein, M.D., and E. Noble Smith, L.R.C.P. Part IX. London: Smith, Elder & Co. 1879.

Twelve Complete Clinical Charts, adapted for Hospital or Private Practice. By P. J. Holm, M.B., B.S. London: H. K. Lewis. 1879.

Clinical Lectures and Essays. By Sir James Paget, F.R.S., &c. Edited by Howard Marsh, F.R.C.S. Second edition. London: Longmans, Green & Co. 1879.

Report of the Board of Health of the City and Port of Philadelphia to the Mayor, for the year 1876.

Annals of Chemical Medicine, including the Application of Chemistry to Physiology, Pathology, Therapeutics, Pharmacy, Toxicology, and Hygiene. Vol. I. Edited by J. L. W. Thudicum, M.D. London: Longmans, Green & Co. 1879.

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The Pocket Gray; or, Anatomical Vade-Mecum. London: Baillière, Tindall & Cox. 1879.

Anatomography; or, Graphic Anatomy. By William Darling, M.D. London: Baillière, Tindall & Cox.

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ORIGINAL ARTICLES.

TIGHT LACING, VENOUS CONGESTIONS, AND ATROPHY OF THE OVARIES.

By PROFESSOR CLELAND, M.D., F.R.S.

In a female subject, well proportioned, and apparently between 40 and 50 years of age, my attention was directed to the large size of the ovarian veins, which may have been nearly a quarter of an inch in diameter. I was surprised to find that the ovaries had undergone the most remarkable atrophy. The left ovary was represented by a white mark like a cicatrix, about a quarter of an inch in length; the right one was twice as long and more prominent, but was obviously thoroughly destitute of proper ovarian structure. I injected the veins with wax, and unfortunately on the left side the vessels burst and destroyed the textures around; but the right side is preserved, and on it there is exhibited a remarkable varicose arrangement of veins, greatest round the immediate site of the ovary, where they form a mass the size of a large nutmeg, and extending in the broad ligament to communicate freely with the veins of the uterus, which are also greatly enlarged. The round ligament of the ovary is represented by a very thick cord of connective tissue, deeply injected with blood; and on making a longitudinal section of the ovary, I find that it has the bulk of a small orange seed, and consists likewise of deeply injected tissue, not very firm, and with one or two cysts in it. The fallopian tube is of large dimensions, with its fimbriated extremity wide; and the traces of the parovarium are distinct.

The uterus measured three inches from the top of the fundus to the external os, and an inch and an eighth from before backwards, and is therefore of average length, and thicker in the walls than usual.

The mucous membrane of the cervix is thickened and spongy, so as to disguise the natural rugosities. The round ligament of the uterus is much larger than I should have expected from the size of the uterus; being about a fourth of an inch thick, and forming a distinct rope, several inches long, with a blood-vessel visible within it.

The vulva was not remarkable in any way save for the very dark colour of the integuments. There were a few distinct caruncles, and the apertures of the glands of Bartholin were patent, discharging moisture when pressed. Those glands were themselves well developed, and the bulbi vestibuli were greatly gorged with blood. The clitoris was of average size, the united corpora cavernosa measuring scarcely more than an inch, a not unusual length.

The vagina was, in its anterior and lower part, more than usually rugose; the rugæ being highly papillose, and each papilla red with contained blood at the summit, while the rest of the vagina had likewise a congested appearance. A similar venously congested appearance pervaded the mucous membrane of the stomach and intestine in their whole extent.

The only other circumstances that were noticed were, first, that both lungs were congested in their whole extent, full of blood and mucus, but crepitant; their condition appearing to have been the immediate cause of death, as was certified by the physician who had attended. Secondly, the liver was not only dark with blood, but it had on the right a sulcus caused by a fold of the diaphragm; and on the upper surface a constriction about two inches broad, of paler colour than the rest, in which a number of vessels belonging to the substance of the organ could be seen enlarging as they passed backwards. Some of those vessels were found to be radicles of the hepatic vein; and on dissecting off a portion of the pale band, its appearance was seen to depend on subperitoneal thickening, while it was supplied by a greatly increased number of capsular branches of artery.

Plainly, the patient had indulged the bad habit of tight lacing to a destructive extent. How far that accounts for the congested mucous membrane of the digestive tube it is difficult to say. But the chronic venous gorgement of the sexual organs, accompanied with enlargement of parts, suggests the possibility of another bad habit.

However that may be, the interest of the case lies in the irritation and large development of all the accessory organs of reproduction, accompanied with total loss of the essential organs—namely, the proper texture of the ovaries.

It is to be regretted that nothing is known of the history of this case during life. It seems in the highest degree improbable that a venous engorgement, which had been favourable to the growth of the rest of the reproductive apparatus, should have operated primarily in producing atrophy of the ovaries. It is more likely that, in the first instance, it led to, or was accompanied with, an excess of action, leading to the destruction of the ova, but not of such a kind as to produce hypertrophy of the surrounding stroma. It will be recollected that ovaries which are past their prime, and no longer contain graafian vesicles in process of maturation, differ very much one from another in size, in the depth of the cicatrices, and the firmness of their texture; and there can be no reason to doubt that in the ovaries, as in other organs, changes of the nature of scirrhosis are to be distinguished from those which primarily involve the essential structural elements of the organ. Had there been, in this instance, a solidification of the fibrous stroma it is unlikely that it could have disappeared.

On the subject of hyperæmia of the ovary, Foerster* remarks that it is "sometimes a consequence of obstructed venous flow in heart disease, or results from abnormal menstruation, and in that case sets in with the symptoms of an active congestion. If the hyperæmia have been permanent, the ovary is found large and juicy, dark red on section, and permeated with injected vessels, and sometimes pervaded with capillary apoplexies." He adds that "habitual hyperæmia may have hypertrophy of the stroma, and enlargement of the ovary as a consequence," obviously appreciating that neither of these conditions is a necessary result.

If venous obstruction from heart disease be sufficient to produce hyperæmia of the ovaries, obviously obstruction by compression of the liver will be at least equally potent; and if one takes into account the notorious effect of obstructed portal circulation in producing piles, one may readily see, illustrated by this case, the far reaching, demoralising effect which tight lacing may have, by causing congestion and irritation of the pelvic viscera.

Another point which this preparation teaches is the possibility of a very considerable ovarian swelling, depending on a gorged condition of venous plexuses. Every one is familiar with the occurrence, in ovarian affections, of deep seated swelling, tender when pressed on, which disappears with treatment, and is scarcely to be accounted for by any appearances familiar in *post mortem* examinations; but this large supply of veins affords some explanation of such cases. Nor are cases of that sort of little importance; for the damage to health from even an apparently slight ovarian congestion may be enormous; and, as the dull pain is referred by the patient to the level from which the nerves take origin, it happens constantly that for years she is treated for affection of the liver or stomach, according as the right or left ovary is the seat of disturbance; and it is to be feared that the mistake is committed as often by consulting physicians as by other members of the profession.

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* *Handbuch d. Pathol. Anat.* 2te Aufgabe, II, 392.

One other remark may be made of an anatomical character. Congested and enlarged papillæ of the rugæ of the vagina are not uncommon; but that the lower and anterior portion is the special seat of a normal papillary development much greater than the healthy appearance of the surface would lead one to imagine is perhaps not so generally known. In preparing a specimen of the genito-urinary apparatus, in a six months' fœtus, I observed that the whole vagina is at that time filled with long papillæ, much larger than those of the tongue at the same period. But in infants at birth, the papillæ have begun to arrange themselves in rugæ, which may still be found over the whole interior, but with a superabundant development at the lower and fore part, or may be mainly confined to that region.

In the adult, the condition, however it may be accounted for, differs to a greater degree from the fœtal arrangement. While, immediately above the urethra, the circular rugæ are gathered in front into a greater prominence, and at the back part a couple of less marked and less papillose prominences fit into the depressions on the sides of the prominence in front, the rugæ diminish rapidly as well as become separated by larger intervals in the upper parts of the tube. Whatever gorges the papillæ, and aids desquamation of the epithelium, must increase sensitiveness; and habitual passive congestion will act in both ways, not only distending the vessels of the papillæ, but encouraging mucous discharges, by which their protection is loosened and removed. The bearing of these remarks on the improper performance of clitoridectomy requires no comment.

ON THE TREATMENT OF HOOPING-COUGH.

By JAMES W. ALLAN, M.B.,
Superintendent and Physician, City of Glasgow Fever Hospital, Belvidere.

(*Read before the Medico-Chirurgical Society on 7th November, 1879.*)

MR. PRESIDENT AND GENTLEMEN,—Hooping-cough is a provoking disease. The patient is a nuisance to himself and all who are in his vicinity. The violent paroxysm of coughing—prolonged till asphyxia seems imminent—and the copious spasmodic vomiting, distress and disgust the patient and the onlooker. But *pertussis* is not merely a disagreeable malady, it is a dangerous one. On turning to the Registrar-General's Returns, one is startled to find the mortality among children due to the disease under consideration.

In children with a scrofulous or tubercular tendency, hooping-cough is apt to prove the spark which kindles up the fire of tuberculosis in the form of *tubercular meningitis* or *phthisis pulmonalis.* Even the strongest and healthiest of children get rapidly pulled down, for the frequent vomiting interferes seriously with nutrition. The treatment of hooping-cough is therefore a matter of very great importance.

Many remedies and modes of treatment have been recommended for the cure of this disorder. In fact, one is at first impressed with the idea that the only difficulty will be in making a selection from the large list of drugs—some of which are represented as specific remedies. I have made trial of a number of those medicines; but I regret to say that, speaking broadly, the result has been disappointing. In this paper I propose to submit to the Society, as briefly as I can, my experience of the treatment of hooping-cough.

But first let me mention a few of the drugs which have been recommended in this disease, with the advantages claimed for them by their respective advocates.

Turning to Dr. Domett Stone's *Epitome of Therapeutics,* we find that Dr. Murchison (*Lancet,* 29th October, 1870), got good results from chloral in a case of pertussis.

" The patient was a girl, aged 4, who was admitted into the Middlesex Hospital, suffering from severe pertussis of about six weeks' duration, complicated with pneumonia and bronchitis. Various remedies, including belladonna and ipecacuanha, produced little or no effect upon the paroxysms, but improvement at once followed the use of chloral in doses of 5 grains every four hours, and within a week the paroxysms had almost ceased." P. 167.

"Dr. Karl Lorey (*Deutsche Klinik*, p. 46, 1871), also recommends chloral.

"Dr. Brynberry Porter (*New York Medical Journal*, July, 1872), is fully convinced of the marked effect of chloral hydrate in alleviating the symptoms of pertussis, and that there seems to be some evidence to show that it has a positive effect in cutting short the disorder. P. 168.

"Sydney Ringer, (*Therapeutics*, pp. 167, 168.) 'In certain stages of hooping-cough, alum is an excellent remedy. It is useful when the acute stage is over, and when there is no fever nor inflammation of the lungs, nor any irritation of the teeth. In fact, it is useful only in uncomplicated cases; but in these, few remedies give more satisfactory results. It speedily reduces the violence and frequency of the paroxysms, often, indeed, at once lessening the frequency one half, and, in fact, soon cures the case. Alum checks, often straightway, the troublesome vomiting so often met with in this disease, while at the same time the appetite much improves—effects observed sometimes, even before the cough undergoes any diminution. Constipation rarely happens when alum is administered.

"'The alum may control hooping-cough by its astringent action on the throat, and in support of this conjecture is the fact that other astringent substances, as tannin, &c., are likewise useful (see tannin), even when the remedy is applied only to the throat, and that alum itself acts best when mixed with some tenacious fluid as gum, glycerine, or honey, by which the solution is made to hang for some time about the fauces. The alum should be given in doses varying from 2 to 6 grains every three hours, or it may be given hourly in corresponding doses. Alum is generally beneficial in the paroxysmal cough, which may continue a long time after the characteristic whoop has disappeared,' &c.

"Dr. West (*Diseases of Children*, 3rd edit.), prescribes a dose of half a minim of dilute hydrocyanic acid every six hours for a child nine months old, gradually increasing the dose to one minim every four hours for a child of that age, and so in proportion for older children."—Domett Stone's *Epitome of Therapeutics*, pp. 167, 168.

Dr. B. F. Dawson (*American Journal of Obstetrics*, May, 1869), speaks in the highest terms of quinine.—*Domett Stone*, p. 170.

Myrrh has been recommended by Dr. Campardon.—(*Bull. Gen. de Therap.*)

The use of lime water, and Dr. M'Lean's "open air treatment," might also be mentioned.—Lime water, *vide* Ringer,

p. 145.—Dr. M'Lean's open air treatment, *vide* Dr. Daniel M'Lean, *Glasgow Medical Journal*, November, 1872.

I beg to submit the following six cases as illustrating treatment. The drugs employed were alum, myrrh, quinine, chloral, lime water, hydrocyanic acid (?) and belladonna liniment. In other cases, croton chloral, bromide of potassium, and inhalation of turpentine, got a trial.

CASE I. (*Alum*).—James Gow, aged 4, admitted 17th April. On 18th April, mother stated that patient had been five weeks ill with hooping-cough. "Kinks" numerous and severe. Put on alum—

℞ Pulv. Aluminis, grs. xxxvi.
Syr. Aurantii, ʒij.
Aq. ad. ℥vi. ɱ.
Sig. Tablespoonful every 4 hours.

Number of "kinks" in consecutive periods of 24 hours ran as follows:—21, 13, 13, 11, 10. On *Sunday 27th* a dose every two hours was prescribed. Subsequently the strength of the medicine was increased.

Run of "kinks" in 24 hour periods—12, 11, 13, 11, 11.

4th May.—Reported as taking the medicine steadily. It had been observed that, on previous night and day, the cough sometimes did not come to a proper "kink." Medicine was being administered every two hours.

List of "kinks"—10, 9, 14, 7, 7.

After *10th May* the nurse, being alone in the ward, was unable to keep a trustworthy reckoning; but the following may be regarded as approximate:—8, 7, 7, 6, 7, 8, 5, 4, 7, 7, 6, 2, 1.

30th May.—"Kinks" gone—had not one for previous five days to best of nurse's knowledge. Little cough. The alum, of which he had been getting less, was stopped.

Note.—There is one great advantage about the alum as a medicine—there is no difficulty in getting the children to take it—for they regard it as a treat.

On *25th June.*—Reported in good health. Free from "kinks." Dismissed on that day well. Disease had, say about a ten weeks' course.

Note.—Other three children (Mary Gow, æt. 2; Robert M'Gregor, æt. 4; Ellen M'Gregor, æt. 2;) were treated with alum. They were afterwards put on chloral, but its use was so soon abandoned as not to constitute a trial of the drug in those cases. Mary Gow's attack seemed to run a nine or ten weeks' course. The teething should be taken into account in this case. Robert M'Gregor had a course of say about 8 weeks. In Ellen M'Gregor the disease ran about a six weeks' course.

Case II. (*Belladonna Liniment, Myrrh, Quinine, Chloral*).—Eliza Ross, æt. 4, admitted 27th March, 1879. On *28th March* "kinks" and spitting of blood reported. Rubbing of spine with belladonna liniment ordered.

"Kinks" in 24 hour periods, 12, 15.

Rubbing with belladonna liniment did not seem to do much good.

2nd April.—"Kinks" reported severe. Myrrh to be tried.

℞. Tinct. Myrrhæ, ʒij.
Syr. Aurantii, ℥iij.
Aq. ad. ℥vi. ♏.
Sig. Tablespoonful every 2 hours.

3rd April.—Got medicine every three hours (should be two hours). "Kinks" for twenty-four hours, reckoning from 8 a.m. of previous day, 14.

Administration of myrrh to be continued—a dose every two hours. Rubbing of spine with belladonna stopped.

List of "kinks" in 24 hour periods, 12, 13, 13, 14 (myrrh commenced), 16, 16, 15, 12, 13, 14, 12, 16, 12, 11, 12. Stop myrrh—quinine to be tried. A one grain powder every four hours in a little syrup of orange.

List of "kinks" continued—12, 10, 10, 12, 10, 14, 11, 13.

22nd April.—Double dose.

List of kinks continued.—12, 11, 11, 10, 10, 9.

27th April.—Treble dose.

List continued.—9, 9, 9, 13, 9, 9.

On *8th May* the powders were ordered to be stopped. It was considered that quinine had had a fair trial, and shown itself no specific.

List continued.—11, 14, 14, 7, 13, 13, 13, 6, 12, 11, 8, 8, 14, 14.

On *22nd May*, report states, "of late the kinks have been worse. Getting no medicine except the cod-liver oil. Hydrate of chloral to be tried."

℞. Syr. Chloral Hydrate, ʒvi.
Syr. Aurantii, ℥i.
Aq. ad. ℥vi
Sig. A Tablespoonful every six hours.

List.—9, 5, 12, 7, 6, 6, 6.

30th May.—Medicine to be given every four hours. 7, 5, 7, 6, 6, 3, 4, 1, 1, 3.

9th June.—Few kinks; occasionally a cough. Getting the chloral every four hours. Evident good effect. Made drowsy by it. As kinks are few now, to be given only once in 24 hours, at bed time. 2, 0, 2.

15th June.—Only occasional kink. Getting only one dose of chloral at night.

21st June.—Had no kinks last night or night before. Had cough. Had kink on 18th of June. Dismissed well 21st June.

As to duration of disease in this case. Patient had measles and hooping-cough about three weeks before she came here. She was admitted on 27th March, and a kink is recorded for 18th June. Say a run of fourteen weeks for the disease.

CASE III. (*Belladonna Liniment, Myrrh, Alum.*)—Charles Ross, æt. 2, admitted 27th March, 1879. Case of measles and hooping-cough. An unhealthy child. Belladonna liniment to spine.

List of "kinks."—6, 1, 9, 9, 13, 9, 6, 10, 11, 10, 11, 11, 11, 12, 11, 11.

On *16th April* it is noted that Charles had lately been getting small doses of myrrh. As the list of kinks did not show improvement, the myrrh was abandoned, and patient was put on alum.

List continued.—9, 9, 10, 8, 9, 8. (Dose to be doubled.) 8, 8, 8, 8, 8, 8, 9, 9, 10, 7, 6. * * * * 10, 10, 8, 7, 8. (On 16th May, alum to be stopped.)

On *21st June* it is noted that he had improved of late. Getting cod-liver oil and syrup of iodide of iron. Free from "kinks," except when he put himself in a passion, and then no proper kink, but rather a sort of dumb cough. Dismissed 21st June, 1879.

CASE IV. (*Chloral.*)—Peter Johnstone, æt. 8 months, a healthy, good natured child, admitted 20th May, 1879.

On *21st May*, mother stated that baby had had hooping-cough for a fortnight or three weeks. Severe "kinks" reported. Belladonna liniment to spine morning and evening.

List of kinks.—20, 24, 33.

On *24th*, "kinks" so severe that time cannot be lost. Chloral in gr. i doses.

℞. Chloral Hydrate, grs. viii.
Syr. Aurantii.
Aquæ āā., ℥ss.
Sig. A Teaspoonful every four hours.

List continued.—25. (*26th*, a dose every two hours now.) * 13, 17, 10, 13. On *30th May*, dose was made something over two grains, and on *3rd June*, 1¼ grains. 17, 19, 13, 15, 14, 8, 11, 10, 9, 13, 13, 12, 15, 17, 14, 15, 16, 17, 9, 10, 12, 10, 10, 11, 9, 9. (On *25th June*, "stop the chloral.") 6, 2, 5, 4, 3, 2, 5, 7.

2nd July.—Kinks fewer since chloral was left off. Getting no medicine. In this case the kinks were very severe.

Case V. (*Chloral, Hydrocyanic Acid, Lime Water.*)—Dan Murphy, æt. 5, admitted 11th June, 1879.

12th June.—Has kinks. Hooping-cough not severe. Twenty-four kinks in twenty-four hours.

13th.—No medicine as yet. Now to be put on chloral.

℞. Syr. Chloral, ℥i. ʒij.
Aq. ad., ℥x. ♏.
Sig. A Tablespoonful for older children.

List of kinks.—9, 14, 14, 11. (Getting the medicine every four hours. Is sleepy and heavy. Kinks not so severe since taking medicine.) 13. (Stop chloral. Put on small doses of hydrocyanic acid.) 15, 14, 11, 10, 15, 12. (Stop hydrocyanic acid. Try lime water. Lime water and milk, equal parts, *ad libitum.*) 11, 20, 15, 12, 9, 9, 13, 11, 12, 14, 9, 8.

6th July.—Getting lime water and milk up till now. Stop lime water. Syrup of iodide of iron. Cod-liver oil and fresh air were prescribed. Noting of kinks to be stopped.

Case VI. (*Chloral.*)—Ann Murphy, æt. 4, admitted 11th June, 1879.

12th.—Kinks, but not severe. 10 kinks.

13th.—Has got no medicine yet. Now to have chloral.

List of kinks.—8, 10, 6, 9.

17th.—Takes her food well. Cries for more. Getting the medicine every four hours. It does not make her sleepy.

18th.—Kinks severe; but she does not put up blood as she used to do. Medicine credited with good effects in this case. To be allowed outside during heat of day.

Kinks.—7, 8, 5, 5, 8, 4, 5, 10, 6, 6, 6, 10, 8, 6.

2nd July.—Has been getting the chloral up till now. Stop it. Treatment—Nourishment and fresh air when the weather will permit. 5, 3, 4, 3.

6th July.—Kinks can hardly be so called. Rather hard cough. Give syrup of iodide of iron and cod-liver oil. Keep as much in fresh air as possible. Cease noting kinks.

I have notes of other cases in which the number of kinks was recorded, but I shall not give them in detail in this place. In three cases, *croton chloral* was administered in small doses, and it must be confessed that a survey of the lists of kinks conveys the impression that benefit was conferred by the drug. This benefit might possibly have been more marked, if the doses had been larger.

In many cases, the spine was rubbed with *belladonna liniment*, not without benefit, it is believed.

In five cases (the Hunters), *bromide of potassium* got a trial, but the results were not particularly encouraging. It must be admitted that these were severe cases, in bad subjects. I have notes of the kinks, but will not tax your patience with them at this time.

Inhalation of turpentine was also tried in those five cases, with doubtful result. In one of them, *hydrocyanic acid* got a short and imperfect trial, with nothing decided to be recorded in its favour. One would not care to push this remedy.

Resumé.—It would, of course, be absurd to attempt to make strong statements out of the slender material afforded by the clinical histories now submitted to the Society, but the following is the impression left on my own mind:—

While not seeking to deny that alum, myrrh, quinine, chloral, croton chloral, bromide of potassium, lime water, inhalation of turpentine, and rubbing of the spine with belladonna liniment may have a certain value in the treatment of hooping-cough, I am of opinion that none of them has a claim to the title of specific. (Hydrocyanic acid hardly got a fair trial, but it is a remedy that one would not care to push in children.)

Chloral hydrate is evidently of value, and in severe cases it (and perhaps croton chloral) should have a fair trial. In babies, rubbing of the spine with belladonna liniment should be practised; but fresh air, tonics, nourishment, and warm clothing should have the first place assigned to them.

The following propositions, for the treatment of hooping-cough, are respectfully submitted:—

1. That, as far as possible, Dr. M'Lean's "open air" treatment should be carried out, care being taken that the patient is warmly clad in flannel, and regard being had to the weather.

2. That the patient should have light, nourishing diet; and,

if of scrofulous diathesis, cod-liver oil and syrup of the iodide of iron should be administered.

3. That, in young children, rubbing of the spine with belladonna liniment should not be neglected; and, in cases where the paroxysms are frequent and severe, recourse should be had to chloral hydrate, or perhaps croton chloral.

4. That the patient should be protected from sudden changes of temperature, and emotional excitement should be carefully avoided.

REPORT OF THE AURAL WORK DONE IN THE GLASGOW ROYAL INFIRMARY, DURING A PERIOD OF TWO YEARS—VIZ., FROM NOVEMBER 1ST, 1877, TO NOVEMBER 7TH, 1879.

By JAMES PATTERSON CASSELLS, M.D., M.R.C.S., Lond.,

Surgeon to the Glasgow Dispensary for Diseases of the Ear; late Aural Surgeon to the Glasgow Royal Infirmary, and Lecturer on Aural Surgery in the Royal Infirmary School of Medicine, Glasgow; Membre-Correspondant de la Société Royale des Sciences Médicales et Naturelles de Bruxelles, &c., &c.

(*Continued from Page 38.*)

As a foundation for this paper, and those that are to follow it, I have selected from among the clinical records already referred to (see January No. of this *Journal*), typical cases of ear disease as texts for the remarks which I shall venture to make to my professional brethren, and especially to the junior members of that large body styled "general practitioners."

GENERAL PATHOLOGY OF EAR DISEASE.

The pathological changes that were found in the cases of ear disease arising out of the *continued fevers*, as judged by physical exploration, were chiefly defects of the perceptive part of the hearing apparatus, manifesting their presence by a congestive subjective tinnitus, and by a diminution of the tone-perception of the affected ear. The *exanthemata* proved themselves to be more common, as well as more destructive, than all the other causes taken together. Especially was this true of scarlatina; regarding the cases arising from the latter cause, it may be said with some degree of confidence that most of them might have been placed in the category of preventable ear diseases.* The pathological changes found in these cases were for the most part catarrhal in character, and mild in degree, with the exception of those arising from rubeola and scarlatina. The latter cases were, without exception, chronic.

In cases caused by the former named exanthem (rubeola), as might be expected, there was great thickening of all the mucous tissues, not only those lining the naso-pharynx, but those of the Eustachian tube and of the tympanum. Even the mastoid cells were involved in this hypertrophy. Often the tympanum contained inspissated mucus which was removed by operation; in other cases this mucus had made its exit by causing ulcerative absorption of a more or less extensive area of the membrana tympani, escaping as a copious thin muco-purulent looking discharge, intermixed with thick, stringy, and tenacious mucus. Caries or necrosis was seldom found in these cases. Nor was true polypus common. On the other hand, in those cases arising from scarlatina, we had the lining membrane of the tympanum deeply congested and villous, from which the true polypus (so often seen in the third stage of scarlatinal ear disease), took its origin. We had also frequent affections of bone, such as caries and necrosis, and as a result of this state of the bony tissue, large masses of fibro-granular tissue, simulating the true polypus, from which, however, they were readily distinguished. These cases had also copious purulent discharges and hæmorrhages from the meatus. The naso-pharynx was usually congested throughout its entire extent, but not thickened by catarrh as in the cases arising from rubeola.

Syphilis, both hereditary and acquired, appeared, as might be expected in hospital practice, as a frequent cause of ear disease. In the hereditary cases the tissue changes in the conducting apparatus were chiefly catarrhal and degenerative, seldom running on to effusion of fluid into the tympanum: and in the perceptive apparatus the tissue changes were also degenerative, as evidenced by impaired tone-perception. In all these cases the history of the transmission of a syphilitic diathesis from parent to child was clearly made out. It was interesting to note that, before the birth of the patient, sometimes two or three, and in a few cases as many as four children, had either been still born, or had survived in a weakly state for a few days, or perhaps for a week or two; while with many such histories the children born after the patient gave no manifestations of the syphilitic taint, being perfectly healthy. In all these cases, without exception, I found that the patient was the first surviving child of many that had been born of the same parents, and in some of these cases I found that the patient was the product of a second marriage, the children of the first marriage, by the same mother, with a different husband, being all in perfect health. Apropos of the syphilitic diathesis in young infants, I have good grounds for saying that foster-nurses are a not infrequent source of syphilitic infection.*

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* Reference will be made farther on to the means whereby the evil effects of scarlatina upon the organs of hearing can be averted with certainty.

It is interesting to note the invariable sequence of the eye and the ear affections in these cases of congenital syphilis, the eye disease appearing first at the age of seven or eight years, as a more or less severe keratitis, and sometimes even iritis, while the ear disease begins to manifest itself as the eye affection passes away, leaving permament defects in the organ of vision. Then the ear disease progresses with greater rapidity, and the characteristic tissue changes become visible in the membrane, sometimes similar to those that have already taken place in the cornea. While the eye disease remains sometimes permanently cured, with more or less perfect vision, the ear affection progresses in most cases till complete deafness is the result. Of course, this is not the invariable issue of every case of syphilitic ear disease as seen in young children, but it is the description of a fairly typical case. In the cases of recently acquired syphilis, the affection of the organ of hearing was chiefly due to the specific Eustachian catarrh, which arose out of the congested and ulcerated naso-pharynx and tonsils. In some cases this inflammatory catarrh advanced and involved the tympanic cavity, ending in a sudden effusion of fluid into it; this leading to rupture of the membrana tympani, a brief discharge of pus-like fluid, and a sudden proliferation of the lining of the tympanic cavity, which made its appearance as a polypous growth in the meatus. In chronic cases, besides the throat affection, there was sometimes found a distinct local eruption of syphilitic granulations and gummata, around and just within the orifice of the external meatus, but having no connection with any tympanic disease. In most chronic cases there was intense deafness, sometimes hyperacousis, with violent tinnitus of a roaring or whistling and hissing character. The deafness in these cases was due in chief part to the implication of the contents of the labyrinth, judging from the facts that the tone perception in these cases was diminished, and that the patients did not hear their own voice in speaking, their vocalisation on that account being harsh and inordinately loud. There were several cases of decent young females, who had become affected in the eyes and ears, becoming at last nearly blind and almost quite deaf in consequence of being impregnated by men who were themselves the subject of syphilis. These females had, in every instance, given birth to decaying fœtuses. The pathological changes were in every respect similar to those met with in the subjects of congenital syphilis. In one case I had the opportunity of watching the successive and progressive changes in the membrana tympani till, from an almost normal condition, it became converted into white fibrous tissue, which could only be penetrated by a sharp knife by using considerable force.

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* In two instances, at least, I have had proof of the justness of this statement; one, a young boy, who was the subject of most pronounced infantile syphilis, having scooped teeth, bad corneal opacities, and great deafness before 10 years of age, and who was the only member so affected of a large family born of the same parents: all the children born before and after him were nursed by their mother—the infected child had a foster-mother. I have also seen a foster-nurse, the subject of tertiary syphilis, suckling the child of healthy parents.

In the cases arising out of *sea or river bathing*, the ear disease was either a direct injury to the membrana tympani, as rupture sustained in diving, or concussion of the labyrinth through compression of the column of air in the external meatus, or by direct contact of the water with the membrana tympani itself. Due to sea bathing, also, were frequent catarrhs of the naso-pharynx, and of the Eustachian tubes, extending even to the cavity of the tympanum. These catarrhal cases were doubtless due, not so much to the bathing itself, as to the imprudent exposure of the body after leaving the water, and to the unwise habit of allowing the hair of the head to remain for hours in a moist state, whereby a lowering of the surface temperature of the body and of the scalp takes place. These cases were characterised by their insidious course, except where the membrana tympani was ruptured, when there was consecutive acute tympanitis.

In the young infant the "snuffles," or *nasal catarrh*, was the cause of an acute tympanitis which, in many cases, ended in a profuse and prolonged muco-purulent discharge from the ears, a much better termination for such cases than the retention of the mucous secretion in the tympanum. Facts go to show that the latter cases invariably end in total loss of the hearing and non-acquisition of speech, and consequent deaf-mutism when the real cause of the defective hearing is overlooked.*

The ear disease caused by *bronchitis* was due to an extension of the inflammation from the bronchial mucous membrane to the naso-pharynx, and thence to the Eustachian tubes, beyond which it did not extend, the state of matters in the tubes, however, bringing about secondary tympanic changes which seriously impaired the hearing.

Pertussis, when the spasmodic attacks were severe and prolonged, usually affected the ears by causing rupture of one or both membranes, with more or less hæmorrhage from the meatuses.

In the *teething* of infancy the tympanum seemed to become inflamed directly from the general congestion of the mucous membrane of the buccal passages. These cases seldom came to effusion, and their most prominent symptom was nocturnal ear-ache, during which the child pulled and tugged at its ears.

Falls and blows on the head, and in the cases of old soldiers, the concussion caused by the discharge of fire arms, affected the labyrinth, probably by causing rupture of minute vessels, and hæmorrhages. Blows on the ear directly were followed by rupture of the membrana tympani, and where this was not the case, by concussion of the labyrinth. In two cases there was secondary acute tympanitis and paralysis of the portio dura of the left side. Both these conditions were the result of assaults made on wives by their husbands.

The ear disease in *phthisis* was consecutive to the general disorder, and due to the non-ventilation of the ear from the defective nasal respiration. This was the case also in *cleft palate*, and in *adhesion* of the free edge of the soft palate to the posterior wall of the pharynx; so was it also with *tumours* in the naso-pharynx and nasal polypus.

DISEASES AND INJURIES OF THE EXTERNAL EAR.

AURICLE—*Case of Malformation of Left Auricle.*—S. M'C., æt. 17, admitted 28th June, 1878. Left auricle imperfectly developed, and orifice of external auditory meatus closed by a continuation of the integumental covering of the auricle. On pressing with the finger tip into the infra-auricular fossa, the outer edge of the cartilaginous meatus is felt to be separated from the auricle. This part of the meatus itself appears to be nearly, if not fully developed. It is not possible to make out the state of the osseous meatus. The conducting media otherwise, and the perceptive parts of the organ, are judged to be normal—the perception of transmitted tones being perfect and heard louder in the closed ear. Owing to the doubt that exists as to the state of development of the osseous portion of the meatus, and remembering that the tympanic portion of the temporal bone, which enters largely into the formation of the anterior portion of the osseous meatus, also takes part in the formation of the osseous portion of the Eustachian tube, the question of operation is surrounded with difficulties. The solution of this question also is rendered more difficult by a knowledge of the fact that defective development of the tympanic portion of the temporal bone is not local, but general, invading the osseous meatus, the tympanic ring, and the Eustachian tube at the same time. Before operating upon this case, as I intend to do, I shall take care to ascertain, as precisely as I can, the state of development of the bony portion of the Eustachian tube. The operation has for its object the opening of the integument now closing the meatus, at the point where there exists a sulcus, as represented in the annexed figure (Fig. 1), and in uniting the edges of this opening in the integument to the free external ringlike margin of the

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* Were I to except the cases of deaf-mutism that arise out of scarlatina and hereditary syphilis, I should certainly say that nearly all the remaining cases of deaf-mutism which I have seen in public and private practice during the last ten or twelve years, were caused by mucous catarrh in infancy, in which the effused mucus had accumulated in the tympanic cavities as above described.

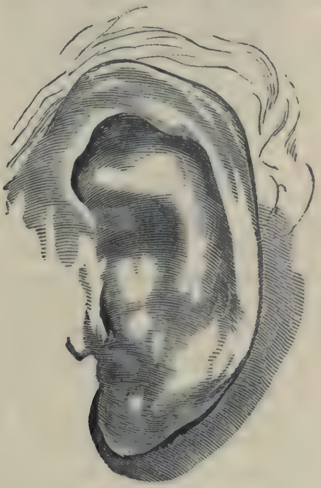

Fig. 1.

meatus. This patient's right ear is normal, and she hears quite well with it, differing in this respect from a case reported by me in this *Journal*,* in which there was a defect in both auricles, the meatus totally absent in one ear, and the hearing on the less defective side so impaired as to place the child for a time in the category of deaf mutes. In this latter case there was no question of operation at all, although one was attempted: the question being whether the child could be rescued from impending deaf-mutism by improving the hearing that remained to her in the less deformed ear. The sequel of this case, in which the readers of this *Journal* may have yet some interest, was as follows. The hearing was so much improved by treatment as to allow of the child being sent at the age of six years (three years after my report), to an ordinary day school where, aided by home tuition, she acquired speech, and made considerable progress in her education. The result of the operation in the case of S. M'C. will be made known in these papers in the course of the year.

Eczema.—There were four cases of eczema of this part (the auricle) in children aged respectively 5 months, 4, 10, and 14 years, mostly caused by dirt or imperfect drying of the parts after washing. Their cure was effected by the use of soap and water, thorough drying of the parts, and afterwards sprinkling them with finely powdered talc.

Ulceration and Abscess.—These cases were treated as such cases are treated in other parts of the surface of the body. Only one case of severe and deep seated ulceration, confined to the concha, occurring in a child aged 3 years and 5 months, deserves notice. Its cause was not manifest, but its progress was rapid and so destructive in its character as to threaten to perforate that part of the auricle in which the ulcerative process was situated. Finely powdered pure iodoform freely applied locally, and cod-liver oil in conjunction with syrup of the iodide of iron, soon checked the ulcerative process and brought about recovery. When I come to speak of the cases in which I experimented with iodoform as an anti-syphilitic agent, I shall speak more fully of its general properties and of its position in the domain of aural therapeutics.

Othæmatoma, or the sanguineous tumour of the auricle in the insane. There occurred a case of what I regarded as an example of this peculiar tumour of the auricle (Fig. 2.) It was in the person of a man, aged 60 years, who was not over bright-looking in the intellect, but who denied ever having been an inmate of an asylum for the insane. The shrinking of the auricle (well represented in the figure) was confined to the integument and perichondrium alone. There were no marks of injury to the integumental covering of the auricle, nor any other evidences to account for the appearance which the surface of this part presented. The case needed no treatment, as there was no defect of hearing.

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* See "Otological Memoranda" in the April No. of this *Journal*, 1876.

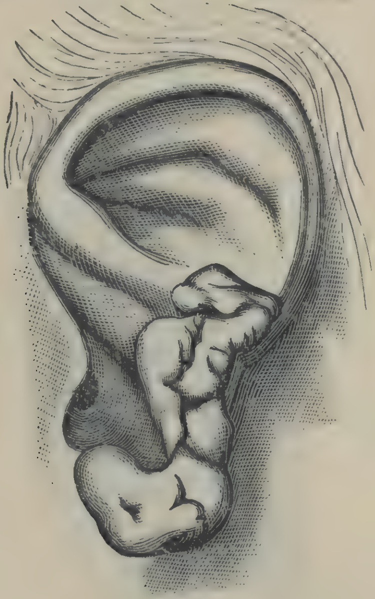

Fig. 2.

As I had doubts about the correctness of my diagnosis in this case, I determined to make a complete and practical study of the subject. With this object in view I first sought the help of Dr. Robertson, of the Town's Hospital and Asylum, who had the goodness to show me a variety of true othæmatomata in persons who were insane. After getting what information I could under the direction of Dr. Robertson, I next asked and obtained the aid of Dr. Yellowlees in my investigations into the subject. He had the kindness to place all his available cases of this kind of tumour, under his care in Gartnavel, at my disposal, offering, at the same time, to give me his personal help in the inquiry I was about to make—an aid which I very gladly accepted. I was also indebted to Drs. Hay and Blair for their assistance in carrying out Dr. Yellowlees' suggestions. My thanks are also due to Dr. Mackintosh, long superintendent, and now consulting physician to the Asylum, for bringing under my notice a very excellent account of this tumour of the auricle in the insane, by Dr. Francis Fischer, physician to the Asylum of Illenau, Baden (translated from the *Allgemeine Zeitschrift für Psychiatrie* into the *Asylum Journal*, 15th February, 1854). The results of my study may be summed up in the briefest way, and are based on the information which I had from these gentlemen, and from the excellent paper referred to.

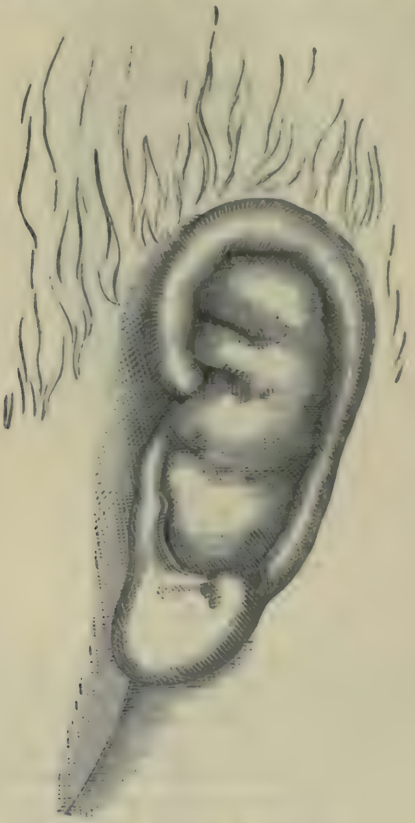

FIG. 3.—Left or Affected Ear.

This tumour of the auricle occurs only in the insane, and is the direct result of local irritation, such as pressure or gentle blows on the auricle. It appears only in acute mania, melancholia, or dementia, or in acute attacks of other chronic mental states. Violence, so great as to abrade or deeply wound the integument of the auricle, even in a favourable case, is not followed by the characteristic tumour of the insane ear. It never occurs in the same ear a second time in the same patient. The surface of the tumour may be red, or bluish-red, and tender, or not changed from the colour of the rest of the auricle, even in acute cases. It always contains a bloody serum, and never suppurates. Its position in the substance of the auricle is between the cartilage and the perichondrium; the cartilage is not involved in the diseased process at its outset. It usually commences in the bottom of

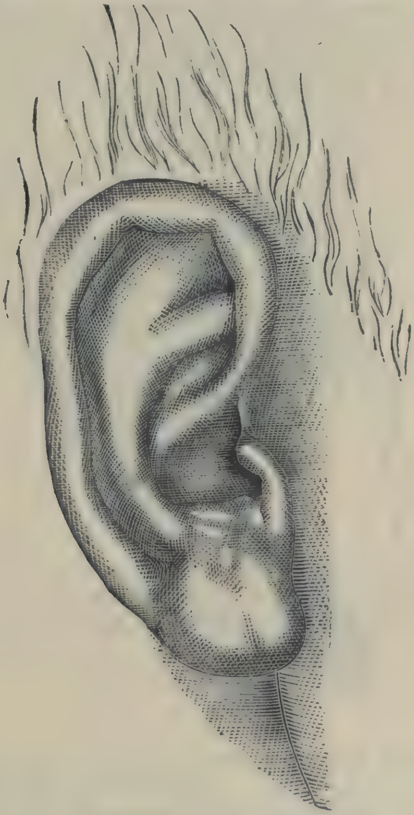

FIG. 4.—Right Ear, Normal.

the concha. It runs a variable course, and as it proceeds to convalescence produces a characteristic deformity of the auricle, which is well seen in the accompanying woodcuts (Figs. 3, 5, 6). Pressure by collodion, or iodised collodion, does good and hastens recovery, but does not prevent deformity. By the kindness of Dr. Blair I am enabled to give the histories of the patients whose auricles are here figured, after drawings from the pencil of the same gentleman.

J. M'K., male, æt. 31, admitted 15th February, 1878, labouring under a mild attack of acute dementia. During an exacerbation of the mental symptoms, on 18th January, 1879, hæmatoma auris commenced to form on the left auricle alone. Figure 3 represents the left and affected auricle on the fourth day, while figure 4 represents the same patient's right and unaffected auricle.

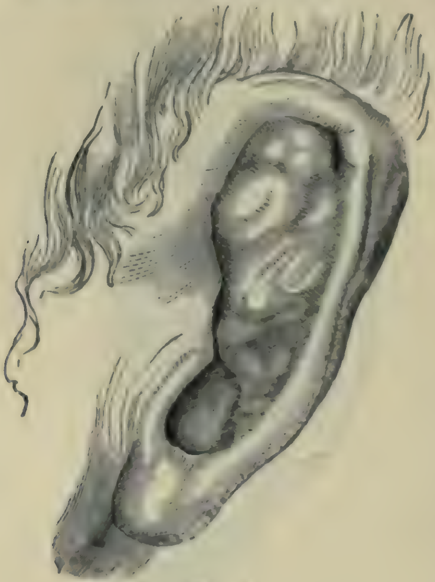

FIG. 5.

P. R., male, æt. 46, admitted February, 1868, labouring under acute dementia of a recurrent character. In April, 1870, both auricles became affected during an exacerbation of the mental symptoms. Both are now in a shrivelled, deformed condition. Figure 5 represents the left auricle at this date (31st January, 1879), when the patient is in a state of confirmed dementia.

M. M'B., female, æt. 30, admitted October, 1868, labouring under an attack of acute mania. Both auricles commenced to swell a few months after admission. At present they are both much deformed and shrunken. Figure 6 represents the left in its present condition, patient being now (31st January, 1879), in a state of confirmed dementia.

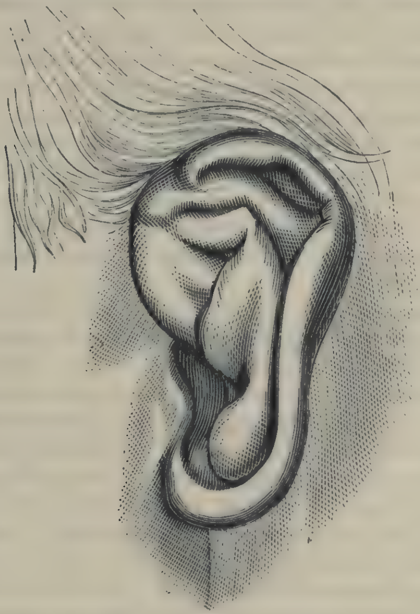

Fig. 6.

THE ACTUAL CAUTERY IN SPINAL AFFECTIONS.

By JOHN GLAISTER, M.B., L.R.C.P. & S. Ed.,
Physician to Anderson's College Dispensary.

(Read before the Medico-Chirurgical Society, 7th November, 1879.)

"Every injury of the spine should be considered as deserving of minute attention. The more immediate cause of anxiety in such cases is inflammatory action, which may be of an acute or chronic kind; and we have seen that it may advance in a very insidious manner, even after injuries that were of so slight a kind that they attracted at the time little or no attention." So wrote Abercrombie exactly fifty years ago, and his experience has been corroborated by many surgeons since. But the particular affection of the spine, to which I wish to draw your attention, is chronic spinal meningitis, which, in each of the three cases to be spoken of shortly, had a very slight origin and a very insidious career.

Erichsen has pointed out how meningitis may succeed concussion of the spine after railway accidents, but the cases which I have met with have not experienced a similar history.

It is my intention to consider, I, Diagnosis; II, Etiology; III, Prognosis; and IV, Treatment; concluding with a few general remarks.

I. *Diagnosis.*—Spinal meningitis of the chronic form occurring in the young or in the adult seems to me not particularly difficult of diagnosis. The most prominent symptom is pain in the back, increased on movement of the vertebral column, of a very severe and lancinating character. This may be situate in any part of the spine, in the cervical, dorsal, or lumbar region, and in my three cases was entirely located in the lumbar part of the column. This pain is increased by movement, as I have said, by bending, by twisting the spine as in looking over the shoulder, or by smart tapping over the spinous processes near the seat of affection. The application of hot sponges generally produces a similar increase of pain, but this is not constant, as in one of the cases to be related, it produced rather an opposite condition of things—a feeling of soothing. In the case of the disease being seated in the lumbar region, we often meet with radiating pains, causing a feeling of constriction round the body, or darting down one or both lower limbs, sometimes even extending to the toes. These radiating pains are often of a highly acute character. In all my three cases these radiating pains were met with, and, in the third case, pain in both feet was bitterly complained of.

Alteration of gait is another symptom helping us in diagnosis. The gait of the patient is a peculiar one. He walks stiffly, either very straight or slightly bent, but always moving the spine in one piece. He picks his steps when walking, lest he stumble, which always occasions him much pain; neither can he walk quickly, because of a slight paresis in the lower limbs. He tells you he cannot rise easily in the morning; that he takes a long time to get straight after getting up, and that then it is he feels great pain. If asked to pick up any object from the ground, it is observable that he takes a peculiar way of doing so; he gradually sinks nearer the ground by flexing his knees, all the while keeping the spine rigidly stiff, and then picks up the object with an extended arm, resuming his original position by extending slowly his knee joints. He tells you he cannot bend without excruciating pain; but if he attempt it, the getting back causes insufferable agony. His manner of bending is this—he slips his extended arm or arms down to his thighs, gently letting his body down, and resumes the perpendicular position in a reverse way, with exceeding caution. All these efforts are evidently intended to keep at rest the inflamed parts which hurt, hints which nature throws out to us for our guidance in treatment.

In some cases, as in my third, there may be great *lordosis* of the spine at first sight; but this exaggeration of the natural curve is very much due to atrophy of the lumbo-spinal muscles, because of their non-use. This would only occur when the disease had considerably advanced, since in the earlier stages of the complaint, these muscles are generally found to be stiff, rigid, and strongly pronounced.

Other symptoms, subsidiary however, of the disease are to be met with in the action of the bowels and bladder. The former are generally constipated, although in the progress of the complaint motions may be passed involuntarily; in the latter organ retention and incontinence often alternate, although the tendency seems to be to incontinence.

There may be paresis of both lower limbs, very slight, however, one being generally more affected than the other, and when present, we may fear some additional myelitis. We may also have modifications of sensation in the lower limbs. "Pins and needles," numbness, hyperæsthesia, coldness, increased warmth are often complained of.

II. *Etiology.*—The most frequent source of the disease is to be found in concussion of the spine, in whatever way brought about; sudden twists, sprains, riding on horseback with wettings unattended to, falls, blows, have all been met with as causing the disease. At first the symptoms are pretty severe, and are often mistaken for lumbago—a conveniently loose term with some for all manner of sore backs.

Very often, however, the origin cannot be got at, the only history being that the back has gone on from bad to worse, increasing either regularly or by fits and starts, and patients often come under our care when the symptoms cannot be tolerated longer, at a time probably long after their commencement.

III. *Prognosis.*—This is still a moot point with surgeons, and after railway accidents, when the question has been raised in courts of law anent the amount of compensation, produces sometimes rare exhibitions of opinions medical; but we may safely say here that the prognosis depends on the severity of the case. That it can be cured is the object of my paper to show, although, in two of the cases, the duration of the complaint was eighteen and twelve months respectively; while in the third (not yet better), the disease has lasted four years. The disease is not dangerous to life immediately, however, although its after effects may be such as to hasten the patient's death, by paralysis of both limbs occurring from myelitis.

IV. *Treatment* may be postponed till my cases have been related; but here, I would only say, it is built upon the lines of local and constitutional treatment. Locally, counter-irritation is the *sine qua non*, with *rest;* constitutionally it varies, some advocating the perchloride of mercury, others a combination of the iodide and bromide of potassium, and Brown-Séquard belladonna and ergot.

Let me now consider briefly the cases which form the basis of this paper.

Two came under my care last winter, the results of which I can now bring under your notice; the third, the most severe case, is now under treatment, and I can only detail to you the result of treatment so far as carried out.

CASE I.—Mrs. F., a weakly, anæmic person of 39 years, had been suffering from symptoms, as before detailed, for eighteen months prior to my seeing her. She remembers distinctly hurting her back washing a stair, thought nothing of it at the time, but felt it insidiously increase in severity till she was compelled to call in a medical man. This was nine months before I saw her. Her then medical attendant treated her by rest in bed, fly blisters frequently repeated, and iodide of potassium internally; but latterly he used hypodermic injections of morphia, night and morning regularly, for a considerable period (at least six weeks), with the result of only alleviating her distress for a limited time, but never completely ridding her of her pain. She was then sent to the country, probably to see if nature would establish a cure, but only returned as ill as before. She suffered on till I saw her on the 25th January of last year.

Her condition then was as follows:—Her general health was impaired; she had anorexia, constipated bowels, and was worn out; her gait was stiff, her back moving "of a piece;" and locomotion produced great pain. She turned round with her whole body, and, if she did so suddenly, she experienced considerable pain in the lower dorsal and lumbar regions. She had so far attempted to perform her lighter household duties, but now felt incapacitated for anything. She could not stoop to pick up any article from the floor, because of the pain it produced both in her back and legs. On examination of the spine nothing was revealed by inspection; but when it was smartly tapped over the last dorsal and all the lumbar vertebræ she winced badly with the pain produced. Warm sponges also increased the pain.

As blisters and morphia hypodermically had been fairly tried, with no beneficial effect resulting, I advised the use of the actual cautery, to which she soon consented; so, on Sunday the 2nd February, with the kind assistance of Dr. Black, who gave chloroform, I *freely* cauterised the affected portion of the spine by linear strokes in its axis, and others transversely to that. The cautery used was the ordinary linear cautery, and at a bright red heat. Cotton wool was then applied, and complete rest in bed, so far as possible in the prone position, was insisted upon.

Two or three days after that she said the pain felt easier, and that turning in bed now caused her little uneasiness, compared with the acute pain she previously experienced. Her condition on the 12th February is described in my note-book thus:—Keeping very much better; can bend cautiously to the ground and pick up a pin with comparative freedom from pain. To continue claret, good diet, and Parrish's syrup; bowels regulated by simple purgatives; cautery wounds sloughing by the help of linseed meal poultices applied tri-hourly.

The rest of the history of the case I supply from my notes.

17th February.—Still continues to improve; cautery wounds kept open by savin ointment (60 grs. to ℥i).

21st.—Back improves rapidly; to allow cautery wounds to heal; feels better.

3rd March.—Wound healed; not so well; pain in back threatens to return.

14th.—Complains of stiffness in the back, with pain; advised the use of cautery again should pain increase.

21st.—Pain has increased.

22nd.—Applied cautery again very freely, avoiding old marks.

29th.—Is a great deal better; treatment of wound as before.

10th April.—Able to be up; walks comfortably, and can bend quite easily.

About this time the wounds began to heal even with the savin ointment, and were allowed to do so; then antimonial ointment (B. P. strength), was applied; this brought out a good crop of pustules, which were kept out by an occasional rub of the ointment for about three weeks.

Patient began at this time to take daily outdoor exercise, and in the beginning of May went to the country. At the present date she feels quite free from the pain, but has a certain amount of weakness in the back, which is doubtless owing to atrophy of the lumbo-spinal muscles, and for which she is using bathings and frictions.

Case II.—Mr. W., moulder, ætat 38, consulted me about the end of last year for sciatica. He had suffered much from this for several months before, and had been under treatment with fly blisters and hypodermic injections of morphia, but without experiencing much relief. At the time he consulted me I thought to give morphia again a fair trial, accompanied by strict rest in bed. I did so, with the result of easing his sciatica so much that he resumed work, but was never entirely free from pain. He complained slightly of his back, to which, however, I own, I did not give much attention, thinking it due, probably, to the lying in bed, which he disliked.

He again, on the 11th February, came to me complaining of agonising sciatica, and, since I had last seen him, the pain in his back had increased to such a degree that he could not stoop at all, nor twist his spine, consequently he had given up work. I was then led to think that I had to deal with a *symptomatic* sciatica, that there was spinal complication behind it, and that the sciatica might probably be due to the extension of inflammatory agencies from the meninges of the cord down the sheath of the nerve. I, thereupon, enquired at the spine, and found that smart tapping over the 3rd, 4th, and 5th lumbar vertebræ elicited great pain, as also did the application of hot sponges. Nor was the sciatic nerve the only one affected, since the obturator and other nerves shared in the disturbance.

I advised the actual cautery and applied it on the 23rd.

25th February (from my note-book).—Feels easier; pain abates; takes food now fairly well, and was ordered a mixture containing 5 grain doses of potass. iodid., to be given three times a day (latterly some bromide was added to it.)

6th March.—Improvement has been continuous; galvanism begun to be applied to back and limbs to restore muscular tone previously lowered; pain all gone.

24th.—Able to go about freely; absolutely without pain. Soon afterwards he went to the coast, and on returning, started work, at which he has continued ever since, without any recurrence of his old complaint.

Note.—His occupation predisposed to neuralgic attacks. He had heavy lifts; was liable to alternating heats and colds, which all moulders more or less experience, but could not refer the origin of his complaint to anything but a *twist* he had received about a year before.

CASE III. (still under treatment).—A. S. R., doctor of medicine, age 43. The attack was brought on by exposure to wet and cold, and at first he could not turn in bed from the pain in the back, and, as often happens in the case of a medical man, his attending to the ills of others caused him to neglect his own. This was about four years ago. A time came, however, when he found himself unable to carry on work longer, consequently he laid himself up, and was attended by a confrère, who blistered him after applying stimulating and anodyne embrocations, but with no beneficial effect. He was at this time given the perchloride of mercury internally, but no good resulted. He then got potass. iodid. singly, then after a fair trial alone, it was combined with the bromide, and lastly belladonna and ergot.

The prominent symptoms are pain in the back (lumbo-sacral region), with stiffness of the thighs and legs, extending to the soles of the feet, with occasional spasms in extremities and back. The pain in the back is characteristic of the disease. Turning from side to side, smart tapping, and pressure, all increase it. He is not able to walk more than a few steps without crutches, because of the pain occasioned him in limbs and back; he cannot lie on his back for some time continuously without being caused great suffering with spasms; and sitting still, with the legs hanging down, for a short time, causes his back to become so stiff and painful that he can hardly move.

At the beginning of the attack he had involuntary motions with retention of urine, but the latter condition has now given way to incontinence, although at the present time slight; the former to habitual constipation. At first there was slight anæsthesia of both legs, and paresis of right; the former state has passed away, and sensibility is now nearly normal, the latter still exists to a slight extent.

His condition when I first saw him on the 12th October was as follows:—General health fair; local examination of spine reveals a seeming *lordosis* from great atrophy of lumbo-spinal muscles. On tapping smartly and pressing the lower dorsal and all the lumbar vertebræ, patient complains of acute pain, causing him to cry out involuntarily. Warm sponges produce a soothed feeling. Progression almost impossible because of pain, but he *can* walk a few steps; there seems to be slight paresis of right leg, and very slight anæsthesia of both, although patient has nothing of the numbness of the feet common in locomotor ataxia. Dr. Baird, of Perth, kindly gave chloroform, and the back was cauterised very freely; dressings as before, and instructions given for absolute rest in bed for *three* weeks, as much as possible in the *prone* position.

He wrote me on the 25th, stating his condition since the operation thus:—"For the week I lay just as I was placed, and the pain in my back was so awfully severe that I had to take morphia suppositories constantly. By the fourth day the poultices gave some relief, and by the end of the week most of the eschars had sloughed off. Present state:—Wounds still discharging, but healing fast. Pain in the back less, but no less in the legs, which feel much heavier; pain in the feet worse."

Again, on the 6th December, he wrote me to the effect that the wounds of the cautery are now cicatrised; complains of pains in the bottom of his back and legs, particularly on going to sleep. He has been in bed since the operation, and now finds himself unable to stand alone, which gives him great pain. He says, however, "but I am in hopes when I get up my strength that there will be some improvement."

General remarks about cases and their treatment.—The satisfactory results of the first two cases are encouraging, and point to the fact that the meningitis had not been complicated with myelitis. Both patients are now living comfortably, and both performing their respective duties. The third case I should have hardly introduced here, owing to its incompleteness, but it is satisfactory to know that the spinal pain has been a little relieved, although not much. I fear, however, that, along with the meningitis, there is some accompanying myelitis; but if we can control the former, there is a good chance of the latter abating, and I am convinced, besides, that, had sterner remedial measures been adopted at a much earlier period of the history of the case, a quicker and better result would have been obtained. Other applications of the cautery will, in all likelihood, require to be resorted to, and so I advised the patient; however, he has not again expressed a wish for its application, consequently he remains nearly *in statu quo.* Now, a word about the actual cautery. I do not wish it for a moment to be entertained that, in bringing forward its use in these cases, I consider it original and novel practice, but what I wish to say is, that it is far too seldom used in such cases, except as a *dernier ressort.* And it is a noteworthy fact that patient No. 3, himself a medical man, states that not one of his medical attendants had any experience of the use of the actual cautery in such cases, till, after he had written me about his case, and I had advised its use, he was casually visited by Professor Saunders of Edinburgh, who said the cautery ought to be tried; and, on looking into the literature of the subject on this particular point, I find that neither Erichsen, Holmes, nor Bryant speak of its use, while Gant, Spence, Miller, and Syme advise it. My idea in using it was so far analogical, as I had seen, when a student in hospital, beneficial results brought about by its use in chronic joint disease, when all else had utterly failed. It is the most powerful counter-irritant we possess, and I think is too much lost sight of in general practice—why, I do not profess to know. From my experience of its use, I am inclined to recommend, as a more usual procedure, when other milder measures have failed after a fair trial, its application, instead of prolonging a line of treatment which is generally conducive to no good effect, keeps the patient suffering, and requires its use in the end; and although it may seem to some a barbarous mode of attacking this complaint when more elegant, much more prolonged, but less successful treatment might be used, still I incline to the quick relief of the patient by whatever means most speedily procure it.

Opiates, stimulating and anodyne embrocations, and the whole army of comparatively gentle counter-irritants do not, in these cases, often do more than temporarily relieve, while the actual cautery seems to strike at the fountain and origin of the evil.

PRACTICAL PAPERS ON THE MATERIALS OF THE ANTISEPTIC METHOD OF TREATMENT.

By GEORGE BEATSON, B.A. (Cantab.), M.D. (Edinb.)

II. ON BORACIC ACID, SALICYLIC ACID, CHLORIDE OF ZINC, AND IODOFORM.

In my paper to the *Journal* of last month I showed that *carbolic acid* is the chief agent employed by Mr. Lister in carrying out his system of dressing wounds, and I pointed out the grounds on which it has been selected; but there are several other substances which he has recommended to be used, as their properties render them more suitable for certain classes of cases. These substances are four in number—viz., *boracic acid*, *salicylic acid*, *chloride of zinc*, and *iodoform;* and I propose, in the present paper, to make some remarks on each of them, taking them in the order I have just mentioned.

Boracic Acid. H_3Bo_3.—This substance, called also boric acid, is not an officinal preparation, except as a test and as a constituent of borax, from which it derives its name, and from which it may be obtained. Borax (A. *Burag*, nitre) is supposed to be the substance described by Pliny, under the name of *chrysocolla*, and which was applied as a powder to wounds, exerting over them a healing and a drying action. It was used also by the Arabians, who called it *tankâr;* and they allude to its cleansing and astringent properties, and to its great value in caries of the teeth. Boracic acid itself, however, though known before its radicle boron, has not such an ancient history, for it was not discovered until last century, by Beecher. The credit of this discovery is usually given to Homberg, who, in 1702, obtained it in small shining plates, which were termed Homberg's Sedative Salt, as they were supposed to possess some anodyne qualities. In 1776 the very important fact was pointed out by Hoffer and Mascagni that, in certain old volcanic districts in Tuscany, the waters which were subjected in the clefts of the rocks to the sulphurous exhalations contained boracic acid. From this it was evident that the substance existed in nature, not only in combination, but also free. In the former state it is found as the mineral *tincal*, which is an acid borate of sodium, obtained from Thibet and Persia, and as *boracite*, which is a borate of magnesium, occurring in Saxony. In addition to this we have it in other localities as a saline incrustation on the shores of certain lakes, and as a crystalline deposit at the bottom of the great Borax Lake of California. It is, however, in certain volcanic regions, as in the Liparian island of Volcano, situated north of Sicily, and in Nevada in the U.S., and in the Maremma of Tuscany, that boracic acid occurs in an uncombined state, associated with hydrogen sulphide. It is this last locality that yields such an abundant supply of the substance. This Maremma is an extensive and desolate tract of mountainous country, which embraces an area of about 30-40 miles. From numerous chasms and fissures scattered about in it there issue jets of vapour and heated gases (*soffioni*). Some of these fissures open directly into the air, but at other places they are covered by small muddy lakes (*lagoni*), and in them small quantities of boracic acid collect, and are obtained by evaporation. In the year 1818, steps were taken for obtaining larger quantities of the acid by constructing a series of artificial basins or lagoons at Monte Cerboli and Monte Rotunda. These basins were built on the sides of the mountains, and were made either by excavation or by masonry, so as to surround the clefts in the rocks, and they were then filled with water from a mountain stream. The hot vapours, in passing through the water, yield to it boracic acid, and heat the water at the same time. The solution of boracic acid thus obtained is passed from one basin to another lower down, subsequently into evaporating pans, and finally into vats, where the acid is deposited. The branch of industry thus established has gone on increasing, and great benefit has accrued to the neighbourhood. One of the first artificial lakes established was situated near Monte Cerboli, and, as the owner's name was Larderello, the product was for some time known, not as boracic acid, but as *Larderellite.* As to why boracic acid should be found in these volcanic regions there is a difference of opinion, but one of the most ingenious theories is that of Dumas and Payen, who hold that there exists in the interior of the volcano, or beneath the under crust of the earth, a layer of the sulphide of boron, which, under the action of the mineral waters, becomes converted into boracic acid and sulphuretted hydrogen. The acid thus obtained by evaporation from the lagoons is a very crude material, and scarcely contains more than three-quarters of its weight of the pure crystallised acid. The first step necessary for the purification of this substance is to convert it into borax, which is done by adding to it sodic carbonate as long as effervescence occurs, when, by crystallisation, a nearly pure borax is formed. It is in this way that borax is chiefly now obtained. It was commenced as far back as the year 1818, and, as a consequence, borax has sunk to three-fourths its former price. From this borax it is possible to obtain pure boracic acid. This is done by treating a hot saturated solution of the borax with either hydrochloric or sulphuric acid, when the boric acid is set free, and sodic chloride or sodic sulphate is formed. These being very soluble, while boric acid is sparingly so, the latter crystallises out on cooling. It is not, however, quite pure, as it always retains a little sulphuric acid. To remove this the crystals are washed with ice-cold water, dried, and fused in a platinum crucible; and, on re-dissolving the mass in four times its weight of boiling water, the acid crystallises on cooling in a state of purity.

Such is the mode of preparation of a substance which has of late come extensively into use, but which is at present made only by one or two firms, as Messrs. Howard & Sons, Stratford, near London, the well known makers of quinine, and Messrs. Sturges, of Birmingham. In price, of course boracic acid fluctuates with the market, but at present it can be obtained from the Apothecaries Company here at 10d. per lb. Boracic acid thus prepared occurs in the form of white translucent hexagonal scales, with a mother of pearl lustre, and having a greasy feel to the touch, but quite free from odour. At a slight heat the crystals effloresce and lose water. They are sparingly soluble in cold water, but more so in hot. Thus at 60° the crystallised acid requires 25 times its weight of water to dissolve it, but only 3 times its weight at 212°. A solution of boracic acid crystals has a weak, bitterish, but scarcely sour taste. If allowed to evaporate upon turmeric paper, it turns the paper brown, as an alkali would do, while it gives to litmus a wine red, purplish tint, instead of the usual bright red of the stronger acids. From these circumstances it appears to be a feeble acid. Boracic acid is insoluble in ether, but is soluble in alcohol, and the solution burns with a characteristic green flame, which, when viewed through the spectroscope, is seen to exhibit five well marked green bands. If a crystal of borax be crushed to powder, covered with oil of vitriol, and alcohol poured over the acidulated salt and kindled, the characteristic green flame will be seen.

This substance now occupies a very important place in Lister's antiseptic method, and the reason for this is that it possesses most marked antiseptic and deodorising properties, so that it arrests fermentative and putrefactive decomposition, and is destructive to minute organisms, such as vibrios and bacteria. When applied to wounds it causes no irritation of itself, either chemically or mechanically, and from its preventing decomposition it lessens suppuration and favours healing. Its non-volatility, of course, limits the sphere of its application, but for a certain class of cases it is the most suitable agent that has yet been employed, and an extended trial of it has only increased the high value to be placed on it. In Sweden it has been extensively employed for the preservation of meat and milk, its antiseptic virtues having been discovered by a chemist in Upsala, Mr. Gahn, and, while it forms an efficient antiseptic, food prepared with it is said to be perfectly fit for use. Of late it has appeared in the same character of a food preserver among ourselves, for the substance so extensively sold under the name of *glacialine*, for keeping wine, milk, and other articles sweet, is, I understand, mainly a solution of boracic acid.

In the *Lancet* of 1st May, 1875, Mr. Lister gives an account of the circumstances which brought it under his notice. His friend Dr. Stang of Sorweg, while on a visit to Edinburgh, informed him that a new antiseptic had been discovered in Sweden, where it was very much used for preserving articles of food and for applying to wounds. It bore the name of "Aseptin," and was in two forms—a powder and a liquid, the latter being also known by the name of "Amykos." On his return home, Dr. Stang sent samples of each of the two preparations to Mr. Lister, informing him that the active principle of both the articles had been ascertained to be boracic acid. Mr. Lister at once proceeded to put it to the test; and its application to several cases, among others, one of onychia and pruritus pudendi, soon showed that it was a most desirable substance as a dressing for wounds, because it was most soothing in its properties, and possessed of great blandness. Further, it corrected all fetor of the discharges, thus removing any source of irritation arising from the presence of putrefaction. As the result of his investigations with it, Mr. Lister was most favourably impressed with it, and an extended trial of it has shown that it is invaluable in the cases of superficial sores, to which its non-volatility limits it. The forms in which it is at present employed in Mr. Lister's method are three in number—(*a*) as a lotion, (*b*) as lint, (*c*) as ointment.

(*a*) *Boracic Lotion.*—This is a cold saturated solution of the acid, of a strength of 1 to 30, each ounce of water taking up 16 grains of the acid. As a solution of the acid is quite clear, and cannot be distinguished from one of carbolic acid or of plain water, it has been thought advisable to colour it, and this is done by means of the tincture of litmus, which, when added to the boracic solution, loses its blue colour and becomes of a purplish red tint. The proportion of litmus required is about ʒi. to the pint. (*b*) *Boracic Lint.*—As I stated, when referring to the properties of boracic acid, it is sparingly soluble in cold water, but readily so in hot, and this fact has been utilised by Mr. Lister to store up a supply of the acid in the substance of lint. When he first used lint soaked in the cold saturated solution as a dressing, he found that it would not answer in that form as a permanent dressing if the discharge was at all free, for as the discharge soaked through the lint it washed out all the acid, and as soon as the discharge had permeated at any one spot through the whole thickness of the lint, putrefaction could at once make its way through there to the surface of the wound. To obviate this difficulty, recourse was had to the fact of boracic acid being much more soluble in hot than in cold water, so that when lint was soaked in a hot saturated solution of it, on being dried, it was found not only to be impregnated throughout its whole substance with the acid, but there was also on it a copious deposit of the crystals. In this way the object desired was attained, and it may be as well to quote Mr. Lister's description of the mode of manufacture of the lint. He says, in the *Lancet*, 1st May, 1875—"In order that the dressing may be trustworthy, it was necessary that the boracic acid should be in some way stored up in it, as carbolic acid is in the resin of the gauze, so that it could not be at once washed out from it by the discharge. A ready means of attaining this object was presented by the fact that the acid, though sparingly soluble in water at ordinary temperatures, is pretty freely dissolved at the boiling point. Thus, at 60° Fahr., water takes up only about a twenty-sixth part of its weight, and at 100° less than a sixteenth, but at 212° more than a third. Hence, if a piece of lint is dipped in a saturated solution near the boiling point, it absorbs a great deal of the acid, and, after being allowed to dry, it is found to weigh about twice as much as it originally did, the weight of the crystals disseminated through it being nearly equal to that of the lint itself. If, therefore, this 'boracic lint' is used as a dressing, the discharge may soak through it repeatedly without dissolving out all the acid, although it takes up in its passage a sufficient amount to render it antiseptic. It is further a fortunate circumstance that the crystals of boracic acid, instead of being hard and harsh, like most crystals, are soft and unctuous, and, therefore, occasion no mechanical irritation of the skin." Messrs. Macfarlane & Co. of Edinburgh are the chief manufacturers of this lint, which has the same reddish tinge as the lotion, owing to its being dipped into a coloured solution of the boracic acid so as to distinguish it from ordinary lint, for the crystals are small and soft to the touch, and mistakes might occur. No special apparatus is required for the manufacture of the lint. It is made by unfolding a roll of the ordinary lint, which is steeped in the hot solution, and when thoroughly impregnated with the acid, is taken out and dried on tables heated by steam. For ordinary use it is best to purchase the lint in the 1 lb. packets in which it is sent out, and which consist of half their weight in lint and half boracic acid. The Apothecaries Company here sell it at 2s. 4d. per 1 lb. packet. To hospitals it is furnished at a less cost, but it might be advantageous for them to make it for themselves as the process is simple, and it would be a saving of expense. (*c*) *Boracic Ointment.*—The third form in which boracic acid is used is that of an ointment, for which Mr. Lister advises the following mode of preparation:—"Take of boracic acid, finely levigated, one part; white wax, one part; paraffin, two parts; almond oil, two parts. Melt the wax and paraffin by heating them with the oil, and stir the mixture briskly along with the boracic acid powder in a warm mortar till the mass thickens. Then set it aside to cool, after which it will be found to be a pretty firm solid mass, which is to be reduced to the proper consistence of a uniform ointment by rubbing down successive portions of about an ounce each in a cold mortar. This ointment, when used, is spread very thin upon fine muslin or linen rag, which absorbs more or less of the almond oil, and leaves a layer of blended wax and paraffin, flexible at the temperature of the body, and separable from the skin with the utmost ease by the discharge, which is thus not at all confined by it, but diffuses itself and flows out beneath it, receiving as it goes an abundant supply of the acid to prevent putrefaction, while cicatrisation is not materially interfered with by the mild antiseptic, and still less by the perfectly bland wax and paraffin."—*Lancet*, 5th June, 1875. This is a very difficult ointment to make, but its great antiseptic powers, its extreme blandness, and its suitability as a dressing, render it an excellent application to wounds. It is also an expensive ointment, not so much owing to the cost of the materials composing it as the amount of labour required for making it. It can be obtained from the Apothecaries Company at 3s. 6d. per lb. Dr. Bishop, in the last edition of *Swain's Surgical Emergencies*, in his paper on the "Antiseptic

Dressings of Wounds," states that the ointment may be prepared by mixing one part of powdered boracic acid with five or ten parts of petroleum ointment or vaseline, according to the strength required. Such a combination is much more easily made, and the cost of it would only be about 2s. 6d. per lb. It also forms a very pleasant ointment, and no doubt will largely take the place of the other, and as I know that Dr. Bishop's pamphlet underwent Mr. Lister's revision, such a combination has received evidently his sanction, though I don't know that he has himself published it in any of his papers.

Salicylic Acid. $C_7H_6O_3$.—This substance, as its name indicates, was formerly prepared by the action of caustic potash on salicin, the bitter principle of the willow and poplar barks, but it was first obtained by Piria in 1839, by fusing salicyl aldehyde with caustic potash. In the form of salicylate of methyl it is one of the component parts of the essential oil of Gaultheria Procumbens (winter green), and of other plants. Recently it has been rendered available on a large scale by what is known as Kolbe's process, which was brought out in 1874, and consists in heating carbolic acid with caustic soda in a suitable vessel, and passing a stream of carbonic acid through it. As a result of this, salicylate of soda is formed, from which salicylic acid can be set free by any stronger acid, such as the muriatic. The acid thus precipitated is in the form of a crystalline powder of a brown or reddish-brown colour, and requires to be freed from its impurities. This is done by dissolving it in boiling water or weak alcohol, and then treating the solution with animal charcoal, when, on the addition of a little more muriatic acid, the filtrate crystallises out. Some consider that even now the acid is not a pure one, but is contaminated with another acid, which is termed, provisionally, *cresyl-salicylic acid.* The purity of salicylic acid is shown by its being perfectly white. It should not even possess the delicate cream colour which is present in some specimens. The commercial acid of a yellow or brownish colour is decidedly impure. It should also be odourless, especially as regards any trace of the smell of carbolic acid, and, when heated on platinum foil, it should volatilise without leaving any ash. The taste of pure salicylic acid should not be very intense, and never acrid or caustic, but slightly sweet, accompanied by a transient sense of numbness. In cold water, salicylic acid dissolves only slowly and in small quantity, 1 in 300 parts; but boiling water readily dissolves 3 per cent of the acid. It is readily soluble in alcohol, ether, and alkalies. At 159° C. salicylic acid melts, and, if carefully heated, volatilises without decomposition; whilst, when rapidly heated, it is decomposed into carbolic and carbonic acids.

As obtained by Kolbe's process it occurs in three different varieties, which are characterised by the following properties: (*a*) Amorphous salicylic acid, indistinctly crystalline, white, and odourless; (*b*) crystallised salicylic acid, forming light, loose needles, similar to quinine, without smell, and of a beautifully white appearance; (*c*) dialysed salicylic acid, which is composed of long crystalline needles, having a silky lustre. This variety is absolutely free from any trace of resinous or tarry matter. It has an extremely mild taste, and gives, with alcohol, a perfectly clear solution. Salicylic acid is made entirely in Germany, by two firms—Von Heyden of Dresden, and Schering of Berlin. Their names appear on all packets of the acid, and, as they are the sole makers of the drug, they fix the price of it. Consequently, it is an expensive article, being 9s. per lb. An attempt was made, by Max Neustadt & Co., to manufacture it in London, but an action was commenced against them by Von Heyden, on the ground that they were infringing Kolbe's patent, and an injunction was granted which prevented them from making the article.

Although salicylic acid has been known to chemists for a considerable time, and as long ago as 1855, Bertagnini is said to have studied its physiological action in experiments on himself, yet it was not until 1874 that Kolbe illustrated its anti-putrid and anti-fermentative actions. This power of destroying low organic forms and ferments is one of the chief characteristics of the substance, for it has even been found to prevent the action of non-organised organic ferments, as in the case of ptyaline on starch. Such substances as milk and beer are kept from turning sour by its presence, and it is much employed now by brewers in connection with brewing. In the case of urine it not only hinders putrefaction, but even stops it when it has commenced; and though it has no deodorising properties, yet it deodorises ammoniacal urine, probably through some chemical change. Its value as compared with carbolic acid is not yet determined. Some hold that it is a perfect substitute for it, and has decided advantages over it, such as its unirritating qualities, its freedom from smell, its weaker caustic powers, and its non-poisonous nature if absorbed. In antiseptic surgery its great advocate has been Prof. Thiersch, of Leipzig, who had it brought under his notice by Kolbe. He is great in its praise, especially of its superiority to carbolic acid in all but a few special cases. Mr. Lister has given it an extensive trial in the form of lotion and ointment, and the result of his experiments has been that he considers it inferior to carbolic acid in its power of destroying bacteria, though he thinks that it is more efficacious in arresting chemical fermentations. As a consequence of this its employment in his system is limited to two sets of cases—(*a*) those in which the gauze causes marked irritation of the skin, and (*b*) those cases where, from some special idiosyncrasy on the part of the patient, symptoms of poisoning arise under the use of carbolic acid dressings. As regards the former, it is sometimes noticed, in antiseptic cases where the gauze dressings have not been changed for some days, that the discharge has a very pungent and disagreeable, nay, almost ammoniacal odour. In addition to this, in such cases, the skin is often irritated in the vicinity of the wound, and the wound itself has not advanced in healing, or has even perhaps become ulcerated at the edges. Mr. Lister formerly thought that all this was due, not to a putrefactive but to a chemical change between the resin in the gauze and the discharge, the product being a chemical irritant. He has more recently attributed this eczematous condition of the skin to some irritation due to an alteration in the effused serum brought about by some other agency, for it has invariably disappeared, or at least been moderated, by adding a little salicylic acid to the "deep dressing," or to the inner layer of the gauze. The salicylic acid is employed in the following way. Owing to its insolubility in water a solution of it cannot be used, and so Mr. Lister advises finely powdered salicylic acid to be treated with the 1-40 carbolic lotion until it attains the consistence of cream, when it is easily applied, the protective and the small bit of gauze used as the "deep dressing" being dipped into this antiseptic solution, which consists of 1-40 carbolic lotion, with salicylic acid suspended in it. As a rule, a few applications suffice to remove the irritation. This same plan is very efficacious in preventing that sour smell which a dressing frequently has when applied to the hands, feet, or axilla, where the sweat is abundant. As regards the second class of cases in which Mr. Lister advises salicylic acid, it is in those exceptional cases where we find carbolic acid poisoning. Such instances are no doubt rare, if Lister's plan is exactly followed and there is no unnecessary syringing of the wounds with carbolic acid, but in a recent lecture, *Lancet*, 20th December, 1879, Mr. Lister admits the possibility of such cases occurring, and that he has even seen them. In this same lecture he says:—"Now it is very desirable that, if such an occurrence should show itself, we should be prepared with means of an alternative character. I have alluded to the boracic acid dressing. This is very good with superficial wounds or sores. But we should not like to trust this mild boracic acid for deep-seated affections like empyema. What substitute, then, have we in case of the rare occurrence of carbolic acid poisoning? I believe the best at present known is salicylic acid. It may be used in the form of salicylic jute, which is a pretty cheap material." In support of this statement he quotes a case of empyema successfully treated by Professor Bennet of Dublin, in which this salicylic jute dressing answered very satisfactorily as a substitute for gauze. In the *Medical Press and Circular* for March, 1876, will be found a paper by Professor Bennett on salicylic acid dressings. As regards jute, it is the produce of *corchorus capsularis*, a plant of the same natural order as the lime or linden (Liliaceæ), and its fibres are of considerable length, varying from five to eight feet. Professor Bennett writes to me that the manufacture of salicylic jute is very simple, and that it is not difficult to get jute of fine fibres which are white and clean looking. The following is the manner of making the salicylic jute in accordance with Thiersch's formula:—Take of jute 1 lb.; of salicylic acid ʒss; of methylated spirit ʒi, or enough to dissolve the salicylic acid with heat. Add this spirit solution of salicylic acid to four ounces of cheap glycerine, and pour the mixture into 1½ pints of hot water. Let the jute be pressed into this fluid, and it will be found to take up all, or nearly all, the mixture. After the fluid has completely penetrated the jute let the bundle be hung up over a clean vessel in a warm place, or in a draught, to dry, and if any fluid drain out into the vessel, add it to the jute next day, so as to keep the entire charge of acid, amounting to about 3 per cent, in the bundle. Jute thus prepared never dries entirely, always having a slight damp feel due to the glycerine. This last was added by Thiersch to prevent the acid flying off in dust, which it would do if the glycerine were not used, and when it does so on handling it brings on violent sneezing, just as a spray of salicylic acid does. Professor Bennett thinks that the glycerine has the additional merit of keeping the jute in a condition that makes it a perfect filter. Such is a short outline of the mode of preparing the salicylic jute, which can be obtained from the Apothecaries Company here at 2s. per lb.

The only other point that I would mention about salicylic acid is that it is known to be absorbed into the system by the fact that it can be detected readily in the urine by means of the chloride of iron, which, after the precipitation of the white phosphate of iron, gives a violet reaction (Kolbe). Drs. Vajda and Heymann (*Wiener Med. Presse*, 1875), found that salicylic acid used to very large wounds imparted a green colour to the urine, though no constitutional symptoms were induced. I may also say that it has been found that salicylic acid is not suitable for cleansing surgical instruments, as it seems to corrode the steel, just as chloride of zinc has a tendency to do.

Chloride of Zinc. Zn Cl_2.—The name of this substance at once calls up the disinfecting and antiseptic fluid of Sir William Burnett, which was a solution of chloride of zinc, containing about 25 grains to the fluid drachm, and having a sp. gr. of 2·0. It was employed for preserving anatomical subjects for dissection, by injection into the blood-vessels; but it is no longer used for this object, as, owing to its corrosive action on steel, such bodies were not found suitable for dissection, as they ruined the dissecting instruments. The process that has long been in vogue for preserving the wood of railway sleepers and other vegetable matters, by impregnating them with a solution of chloride of zinc, depends on the property which this substance has of seizing on albumen, and combining with it so as to produce a new chemical compound, having the very opposite quality to moist albumen itself, that is, having no tendency to undergo change. It was Dr. Canquoin who, in 1837, proposed chloride of zinc as a topical application in cancer, and it was shortly afterwards employed in England by Mr. Ure (*London Med. Gaz.*, vol. xvii, p. 371). But its introduction into surgical practice is due to the late Mr. Campbell de Morgan, of the Middlesex Hospital. Struck by the frequency of the return of cancer after operation, he thought that it might be caused by the presence of cancer germs on the cut surfaces, and, with the view of destroying them, his plan was to freely wash the wound with a solution of the chloride of zinc—40 grains to the ounce.

Chloride of zinc is obtained by the action of hydrochloric acid on zinc, when the hydrogen of the acid is replaced by the metal. It occurs either in the form of a white powder, or in colourless opaque rods or tablets of a translucent and waxy appearance. It is very deliquescent, and is almost entirely soluble in water. When dissolved and well diluted it has an acrid, astringent, metallic taste. It is an expensive drug.

Locally applied, chloride of zinc is a powerful and penetrating escharotic. "Its local action as a caustic," observes Dr. Pereira, "depends partly on its affinity for albumen and gelatine; so that when placed in contact with living parts, into whose composition these organic compounds enter, the chloride, exercising its affinity, destroys the life of the parts, and, uniting with the albuminous and gelatinous parts present, forms an eschar." Its application is followed by a sense of warmth in the part, which soon amounts to pain of a very severe character, and which lasts for several hours, in fact, until the parts in contact with it are dead. The slough thus formed comes away in from six to twelve days, and is marked by the entire absence of odour. There is no danger of any constitutional disorder arising from the absorption of the chloride. These remarks, however, do not apply to a solution of the chloride of 40 grains to the ounce. When such a solution is applied to the surface of an ulcer, or of any recent wound, no apparent eschar is formed, and it seems to possess this remarkable property, that the effects of even one application last for some time, so that putrefaction is removed, and the tissues, as it were, pickled for three or four days. The putrefaction may not be entirely removed, but it is absent at a time when the tissues are specially liable to absorption, that is, before granulations have formed. In the *Lancet*, 20th March, 1875, Mr. Lister writes as follows:—"Chloride of zinc, I may remind the reader, has this remarkable peculiarity among all antiseptics that I have tried, that a single application of it to a recent wound, in a solution of the strength above mentioned, though it produces no visible slough, yet prevents the occurrence of putrefaction in the cut surface for days together, in spite of the access of septic material; and, if the discharges have opportunity to flow freely away, as after the removal of a tumour of one of the jaws, or a portion of the tongue, there may be absolutely no odour from first to last, the divided textures being thus guarded from the effects of putrefaction during the dangerous period before they have been covered by the protecting layer of granulations." On the above grounds, Mr. Lister has introduced into his system this irritating and non-volatile salt, and it has been found to answer admirably in the class of cases to which it can be applied. These cases are varied in their nature. Thus, it is very applicable to the superficial surfaces of ulcers, with their granulations and smelling discharges. In them the raw surfaces have been exposed to the atmosphere for a time which may vary in length, but has been sufficient to allow of a superficial putrefaction of the tissues, which putrefaction it is desired to destroy, so as to admit of the wounds being regarded as aseptic. Again, it is very useful for applying to the surfaces of recent wounds, before we use the antiseptic dressings, if the wounds should happen to have contained previously some focus of putrefaction, as in cases of diseased joints, with sinuses leading to them. Under such circumstances the sinuses should also be injected. Lastly, one of the most valuable of the uses of the chloride of zinc solution is in cases of recent wounds in the vicinity of, or communicating with, the different cavities of the body, as the mouth and anus. The surfaces of such wounds must of necessity be bathed with the secretion of the cavity, and infection of the system may arise from the putrefactive changes which must arise, but the application of chloride of zinc solution meets this difficulty for a time, and tides over the period of greatest danger. For all these different cases, a solution of 40 grains to the ounce is the one employed, and it is the only solution of that substance made use of in Lister's system. In making it there is a matter of some little importance to be noted. If we take 40 grains by weight of the ordinary chloride of zinc it is possible that we have not really that amount, for, with keeping, the chloride alters its composition, becoming converted partly into the oxide and carbonate of the metal. As a consequence of this, were we to mix these 40 grains in water, not only would we get a solution of imperfect strength, but we would also have one that is quite milky looking, and which, on standing, would deposit a copious white precipitate of the oxide and carbonate of zinc. The best way to make a clear and trustworthy solution is to employ the officinal *liquor zinci chloridi*, having ascertained, by evaporating an ounce of it, the exact strength of that particular preparation, for different solutions of it vary somewhat in strength.

Iodoform. CHI_3.—This substance, which is known also as the yellow iodide, or ter-iodide of formyl, was discovered by Serullas as far back as the year 1822, and its properties have long been known to chemists. It was introduced into practice in 1848 by Dr. Glover (*On the Physiolgoy and Medical Properties of Iodoform*, Edin., 1848), but it has not become officinal, and it is only of late years that it has attracted attention. As its name implies (*iodine, formyl*), it is analogous to chloroform and bromoform. Thus it may be regarded as chloroform ($CHCl_3$), in which the three atoms of chlorine are replaced by three of iodine (CHI_3). There are several processes for preparing it, as Bouchardat's, Filhol's, and Rother's, all of which depend on the fact that in the presence of alkalies iodoform is produced by the action of iodine on alcohol or aldehyde. The readiest way for obtaining it is to add an alcoholic solution of potash to tincture of iodine until the liquid is no longer brown, but yellow, care being taken not to add excess. The liquid is then evaporated to dryness, and the residue treated with water, when the iodoform crystallises out in a bright yellow, lustrous, coarse-grained powder, which consists of hexagonal plates of a strong persistent saffron-like odour. This odour is very pungent and penetrating, adhering persistently even to vessels in which preparations of iodoform have been. The crystals are volatile, soft to the touch, and insoluble in water, but soluble in alcohol and in ether. They have a peculiar sweetish taste. Iodoform is made largely in Germany, and can be purchased from the Apothecaries Company here at about 2s. 10d. per oz.

I need not go into the physiological actions of iodoform beyond saying that in a very short time after its administration it can be detected in the breath, urine, and perspiration. As regards its local effects, it undoubtedly possesses anodyne and sedative powers, which render it of value in painful and malignant tumours. As an instance of this local anæsthetic influence, it may be mentioned that M. Morétin found that when introduced in the form of suppository into the rectum, defæcation could be accomplished without consciousness on the part of the patient, thus showing that it was able to blunt even common sensibility. Other writers, as M. Righini (*Journal de Chim. Med.*, 1853), have borne testimony to its powers as a *disinfectant*, and there seems to be evidence that, in syphilitic as well as in cancerous affections, it favours cicatrisation. In some hospitals, as in that of Philadelphia, it has become the standard application to indolent leg ulcers, and besides its local anæsthetic action it acts as a decided stimulant to nutrition. In short, iodoform may be said to allay pain, to change the morbid action in parts, and to be antiseptic. It is used in different ways. Thus, in uterine cases, the dressing has taken the form of cotton wool thoroughly impregnated with it, but by surgeons it is employed either as an ointment, or as an ethereal solution, or as a powder. When in this last form, it may be used undiluted or mixed with equal parts of Fuller's earth, or magnesia, or tannin, this last substance seeming to have the peculiar effect of removing, in some measure, its powerful and disagreeable odour. I fear this last property of the drug and its cost will interfere very much with its general use in surgical practice.

Mr. Lister has, however, of late introduced the use of it into his system, employing it *undiluted* and in the form of *powder*. He advises it to be sprinkled over the surface of putrid ulcers, with a view of purifying them, before any antiseptic dressings are applied, and in this class of cases it has more or less taken the place of the chloride of zinc, over which it has the advantage that it causes no pain.

To recapitulate then, in conclusion, I would direct attention to the following points:—

(1.) In addition to carbolic acid, Mr. Lister has introduced into his system the following substances, boracic acid, salicylic acid, chloride of zinc, and iodoform.

(2.) Boracic acid is a bland and excellent antiseptic, but being non-volatile is used chiefly in superficial wounds.

(3.) It is employed in three forms—(*a*) a cold saturated solution, (*b*) lint, (*c*) ointment.

(4.) In antiseptic cases, dressed with the carbolic gauze, where any eczematous eruption appears in the vicinity of the wound, it is advisable to moisten the "deep dressing" or the inner layer of the gauze with the 1-40 carbolic lotion, thickened with powdered salicylic acid.

(5.) In those rare cases where carbolic acid poisoning makes its appearance under the use of the ordinary antiseptic dressings, salicylic acid may be exchanged for the carbolic acid and employed in the form of salicylic jute.

(6.) The only solution of chloride of zinc in use in Lister's system is one of 40 grains to the ounce.

(7.) This chloride of zinc solution is suitable for correcting putrefaction in superficial wounds and sinuses, and is advantageous as an application to recent wounds in the vicinity of the different cavities of the body.

(8.) Iodoform, in the form of powder, is sprinkled over ulcers, so as to purify them previous to applying antiseptic dressings.

(*To be continued.*)

OBSERVATIONS ON THE SUBCUTANEOUS METHOD OF ADMINISTERING MEDICINES, FROM CASES TREATED IN PROFESSOR M'CALL ANDERSON'S WARDS IN THE WESTERN INFIRMARY OF GLASGOW.

By JOHN MOYES, M.B., C.M.

I. *Subcutaneous Injection of Arsenic in Two Cases of Skin Disease.*

1. *Case of Chronic Pemphigus.*—Charles H——, aged 6, was first admitted into the Western Infirmary on 24th October, 1876, suffering from an eruption of the skin which had begun in the previous July. Up till that time he was said to have been quite healthy. On examination, the flexures of the thighs, the lower surface of the penis, the scrotum, and the perinæum were found to be covered with large, clear bullæ, interspersed with raw discharging patches left by the bursting of previous bullæ. These occurred in clusters, and occupied, besides the parts above mentioned, the axillæ, the tops of the shoulders, the neck, and the forehead. The back was covered by dark, round patches, evidently the marks of a former eruption.

Cod-liver oil and syrup of the iodide of iron were given, and the parts dusted with Fuller's earth. Under this treatment the general condition improved, but the bullæ still came out in small crops, and, on 27th November, a trial was made of the liquid extract of ergot in 10 minim doses, thrice daily. On 23rd December the bullæ were still as numerous as before, although the dose of ergot had been gradually increased to 20 minims of the liquid extract every four hours. It was therefore stopped, and Fowler's solution given, beginning with 2½ minims thrice daily, and gradually increasing the dose to 5 minims. On 19th February it is noted that the patient is very well; no fresh bullæ have been observed, and the skin is resuming its natural appearance. He had taken in all, up till this time, ʒiss of Fowler's solution. Dismissed 19th March, 1877.

Re-admitted 26th June, 1877. It appears that the medicine had scarcely been stopped when the bullæ began to re-appear, and the patient, at this date, presented much the same appearance as on his first admission. The treatment was resumed, and, on 24th August, he was again dismissed well. Nothing but the stains were to be seen on his skin. He had taken in all ℥iss of Fowler's solution.

Re-admitted on 2nd November, 1877, in the same condition as at first. Fowler's solution was again given, but the date of dismissal is not mentioned.

Re-admitted on 19th March, 1878, in the same condition as at first. For about a month Donovan's solution, in 5 to 6 minim doses thrice daily, was tried, and after this Fowler's solution was given. The eruption had entirely disappeared about the beginning of August, up till which time the patient must have taken at least ℥iiss of Fowler's solution.

Re-admitted 9th November, 1879, in same condition as at first. On the 27th November the injection of Fowler's solution was begun. For the first seven days, 3 minims were injected daily, but on the 8th and afterwards, 6 minims. The eruption has now (6th January, 1880) almost completely disappeared. The total amount of Fowler's solution injected has been ʒiiiss.

Remarks.—We have here an account of five attacks of Pemphigus, four of which were treated by Fowler's solution, given by the mouth, and one by the same preparation used subcutaneously. In only three of the former have we data by which to compare the results of the two methods.

The attacks appear from the reports to have been of nearly equal severity, and we have noted below the dates on which the remedies were begun, the dates on which the skin might be said to be practically healed, the number of days intervening, and the total amount of Fowler's solution used each time—

	Fowler's Solution begun.	Eruption healed.	Days.	Total Amount of Fowler's Solution.
1st attack.	23rd Dec., 1876.	19th Feb., 1877.	58	℥iss.
2nd ,,	26th June, 1877.	24th Aug., 1877.	59	℥iss.
3rd ,,	5th May, 1878.	1st Aug., 1878.	87	℥iiss.
	Injections begun.			
4th ,,	27th Nov., 1879.	6th Jan., 1880.	40	ʒiiiss.

It will be seen from the above comparison that the eruption disappeared much more quickly when the subcutaneous method was employed, while the quantity of arsenic used did not amount to a third of that given on any occasion by the other method. It must be borne in mind, however, that the interval between the two last attacks was longer than that between any of the previous ones, and this may have affected the time and the amount of arsenic required for the cure.

The mode of administration was as follows:—$\frac{1}{6}$ gr. of morphia was injected first in the ordinary way, and the needle was left stationary while the syringe itself was removed. The required amount of Fowler's solution, *minus the Tinct. Lavend. Co.*, and diluted with an equal quantity of water, was then taken up into the syringe, the latter again attached to the needle, and the second injection made. Immediately thereafter a piece of ice was laid on the part, and kept in position by the patient himself for about half-an-hour, with the object of preventing inflammation. In this case no bad results of any kind followed the injections.

2. *Case of Psoriasis.*—Angus W——, aged 21, was admitted on 11th October, 1878, suffering from psoriasis. On examination, the body and limbs, even the face and scalp of the patient, were found to be covered with the eruption. The disease had made its appearance nine years previously, and in spite of treatment, had gradually grown worse. It had never entirely left him during those years, but it usually improved a little in the winter.

On the day after admission he was ordered 5 minim doses of Fowler's solution thrice daily, and chrysophanic acid ointment of the strength of ʒj. to ℥j., to be used externally. This treatment was continued with very little benefit until the 30th October (18 days). On that day the subcutaneous injection of Fowler's solution was begun, the dose being 5 minims daily. On 4th November a distinct improvement was visible, the scales disappearing rapidly all over the body. On 10th November (6 days later) the change in the patient's condition was well marked; hardly any appearance of eruption existed on the face; the trunk and limbs were also much improved, but a few scaly patches were still left. From this date the injections were given twice daily. A week later very few scaly patches were left, and these appeared to be dying out. The skin had a reddish tinge, and was slightly marked with small glistening spots. A small abscess with an infiltrated hard base had appeared in the left hip, where an injection had been made, and ultimately this had to be opened and ℥ss. of dark curdy pus evacuated. On the 2nd December there were still some slight traces of the disease, but the injections had to be discontinued, as a small abscess had formed on the right hip. 15 minims of Fowler's solution were now given thrice daily by the mouth until the 19th of December, when it was entirely discontinued and Tr. Saponis Virid. c̄ Pice rubbed into the skin night and morning. The patient, being anxious to get home, was dismissed on 8th

January, although there were still some slight traces of the disease, but on the body only.

Remarks.—The effects of the subcutaneous method were even more striking in this case than in the preceding one, as the eruption, which had remained unaffected by the application of chrysophanic acid and the simultaneous administration of arsenic by the mouth, began to disappear rapidly after two or three injections. The local effects were troublesome. Notwithstanding that the same method was used and the same precautions enjoined as in the Pemphigus case, an abscess formed on each hip, and in other places where the injections were made there were occasional threatenings of inflammation. The marked difference between the two cases in this respect was most likely due to the larger amount injected in the second case, as it was only after the 10 minims daily were given that the bad effects showed themselves: there may also have been a greater constitutional liability to inflammation, or the large quantity of arsenic given in former attacks in the Pemphigus case may have established a certain amount of tolerance, even of the local effects.

Professor M'Call Anderson is at present making trial of the liquor sodæ arseniatis, which is likely to prove non-irritating, and to render unnecessary as well the previous injection of morphia as the after application of ice.

CURRENT TOPICS.

THE APPOINTMENT OF REGISTRAR-GENERAL.

DR. WILLIAM FARR was appointed Superintendent of the Statistical Department of the General Register Office in 1838. He was then a young practitioner and lecturer in London, editor of the *British Annals of Medicine*, and marked in the profession for special aptitude and abilities for statistical inquiries, aided by high mathematical attainments. Already he had written the article "Vital Statistics" in *M'Culloch's British Empire*, as well as minor papers of the same cast. Farr was introduced to the public in his new official capacity by the Registrar-General as "a gentleman of the medical profession, whose scientific knowledge and intimate acquaintance with statistical inquiries are ample pledges of his peculiar fitness." The first of that long series of "Letters to the Registrar-General," which have accompanied each successive *Annual Report*, was dated 6th May, 1839, and referred to the deaths for the half-year ending 31st December, 1837. We have only to read that letter to discover the fact that the task before him was nothing less than the institution of medical statistics in this country. Indeed, it was more. He had not merely to put in place and build up on a preconceived plan the stones ready hewn by the hands of subsidiary craftsmen, but he had to begin by educating the craftsmen. There was no such thing as a "Statistical Nosology." He found, on revising the certificates of death for this half-year, that they were expressed, for the most part, in terms which were utterly useless for a scientific classification. He says:—"Each disease has, in many instances, been denoted by three or four terms, and each term has been applied to as many different diseases; vague, inconvenient names have been employed, or complications have been registered, instead of primary diseases. The nomenclature is of as much importance in this department of inquiry as weights and measures in the physical sciences, and should be settled without delay." He therefore introduces to the notice of the profession, the first rough outlines of that system of nomenclature which is now in use. No one can understand what necessity there was for the task, or how heavy the task was, without referring to this nosology, at page 95 of the first *Annual Report*, where will be found not only the terms suggested, but the "synonymes, provincial terms, &c.," which it was desired to displace. "Small-pox" and "chicken-pox" were to displace "swine-pox, water-pox, hives;" and "thrush" was to be substituted for "flox, frox, frost, white mouth"! In the *Report* for 1842, the subject occupies some 80 pages, in which Dr. Farr gives a dictionary of such terms as these, with reference of each to the proper head in his Nosology; and also develops, in a learned essay, a system of nomenclature and classification of diseases founded on an analysis of morbid phenomena, in which the word "zymotic" first makes its appearance.

Beginning with 1837, and ending for the present with the thirty-ninth report, for 1876, there has been, without a break, appended those letters above the modest signature "William Farr;" from first to last marked by the same lucid marshalling of the facts, the same masterly command of all the resources of method and numerical investigation, the same unaffected and vigorous English, breaking out every now and again, when stimulated by a clear view of some wide generalisation, into passages of great eloquence and pure philosophy. Few members of the profession, except those who are officially interested in public health administration, have direct acquaintance with the *Registrar-General's Reports;* but their indirect influence (an influence the source of which may not have been generally recognised) upon practical medicine must have been very great. The constant endeavour after exactness of diagnosis and precision of nomenclature is itself a wholesome discipline which re-acts inevitably upon treatment. It is, however, in the department of Public Health that it is easiest to recognise Farr, not only as the source of much of the exact knowledge which formed the basement and framework for its structure as a science, but as the stimulator of its administrative activities everywhere through the cogency which he imparted to the facts of the national mortality. In his first letter, Farr says:—"Diseases are more easily prevented than cured, and the first step to their prevention is the discovery of their exciting causes." He immediately enters upon a contrast of the mortality, and the nature of its causes, in town and country, and lays the foundation of those laborious inquiries, continued from year to year, and from decade to decade, which have established the doctrine of density in relation to death-rate, a doctrine which has been of incalculable practical use in the reconstruction of old and extension of new quarters of city population, both to the Imperial Legislature and the local Council, and is a guiding principle in much daily practical sanitary work. It is impossible here to go into further details of the contents of those thirty-nine annual letters. We are confident that, if the medical officers of health of this country were asked where they go for the basis of fact which supports the main principles of their daily work, they would reply to the statistical classics of William Farr. The backbone of them is this series of annual reports, but built up about these are many exhaustive and special treatises, such as the Supplements which contain his reviews of the inter-census decades, his Reports on Cholera in 1848-49, and in 1866, his Life Tables, and other contributions to the principles and practice of life insurance, of which the greatest authority on the history and literature of life insurance says:—"They rank among the most valued contributions to the world's knowledge on these subjects."

We have seen in what eulogistic terms the then Registrar-General introduced Dr. Farr as his coadjutor to the public. We now quote the estimate of his services by the late

Registrar-General, Major Graham, given in reviewing, on the occasion of his retirement, the results of his own long labours, and expressed in terms which are not more flattering to Dr. Farr than they are effective as a testimonial to the cordial co-operation of two officials whose relations might, in the case of persons of less magnanimity, have led to jealousy and heart burning.

"Lastly, I must express to Dr. Farr, whom in 1842 I had the good fortune to find here presiding over the Statistical Branch, my grateful acknowledgment of the important services he has ever since continually rendered. He is acknowledged throughout Europe, the United States, East Indies, and the Colonies, as one of the first statists of the day. To his scientific researches and reports I attribute any reputation that may have accrued to the General Register Office of England and Wales from the time he accepted office in this Department."

We might have been contented with this general testimony to the merits of Dr. Farr, but we have also endeavoured to give a more solid conception of their unique substantiality—and why? Not to justify some equally unique acknowledgment of those merits, not to point to his promotion in the service of his country, not even to explain some very special re-arrangement of the public service which would admit of the retention of a servant whose experience and attainments could not be spared, but to emphasize our solemn protest against the scandalous abuse of patronage which has driven him from office. The voice, both of general and professional organs of opinion, has made our readers aware of the appointment to the office of Registrar-General of the brother-in-law of a cabinet minister, and the enforced retirement of Dr. Farr. We are aware that we are "crying over spilt milk." The thing is done, and cannot be undone; but we should fail in our duty, as representing the profession in Glasgow and the West of Scotland, if we passed by the conduct of the Government on the present occasion in silent and soured disgust. We do not believe that even the object of this "spurn of patient merit" would contend that the whole future of vital statistics in this country will be blasted by his withdrawal from their service. The modesty which has marked his distinguished career would assert itself in his acknowledgment that no man ever attains to such importance in any department of life work that his place cannot in some measure be filled; but why precipitate the test of our individual importance, which, in any case, death and natural decay will all too soon apply? There is no justification for it whatever in the present instance. Only the power is there, and it has been exercised in defiance of common propriety as well as of public opinion. Nothing remains for us to do but thus, in very inadequate terms, to show that we resent the slight, and to express our earnest hope that this and other like expressions of professional sympathy may afford some solace to Dr. Farr in this miserable conclusion to a long, laborious, and singularly useful public life.

REVIEWS.

Annual Report of the Board of Regents of the Smithsonian Institution, showing the Operations, Expenditures, and Condition of the Institution for the year 1877. Washington: Government Printing Office. 1878.

We owe an apology to the Regents of the Smithsonian Institution for the fact that this is the first notice we have taken of their "Annual Reports," which have reached us regularly for some years. James Smithson, who is described as "of England," bequeathed his property some thirty-three years ago to the United States of America, "to found at Washington, under the name of the Smithsonian Institution, an establishment for the increase and diffusion of knowledge among men." The total bequest amounted to £111,200. A sum of about £50,000, derived from accumulated interest, was expended on building, and the capital now amounts to upwards of £146,000. The receipts during the year 1877 were about £10,200. This sum is expended from year to year in accordance with a programme drawn up in 1847, in two equal parts, one part being appropriated to increase and diffuse knowledge by means of publications and researches, the other part to the formation of a library and "a collection of objects of nature and of art." The publications are of three classes—viz., the contributions to knowledge, consisting of memoirs containing positive additions to science, resting on original research, generally subsidised from the funds of the Institution; the miscellaneous collections, composed of works intended to facilitate the study of various branches of natural history, meteorology, &c.; the annual reports, in which, besides financial statements and a general account of the work of the Institution, there are translations from works not generally accessible to American students, reports of lectures, extracts from correspondence, &c.

It will be obvious from this short summary of the work of the Smithsonian Institution how systematically and intelligently the will of the testator has been carried out, and how essential it is, not only for the valuable papers which they contain, but as an index to the progress of science, we might say, in the world at large, that scientific men should take note of these annual reports. As usual with all the State publications of America, they are liberally distributed wherever they may be useful, a practice which contrasts disagreeably with the extreme stinginess of the Government of this country in all its departments, which rarely gives them gratis even to those officially connected with the local administration of those departments. They are with difficulty even to be purchased, owing to the limited issue of such documents. It would be quite beyond the space and scope of this *Journal* to present anything like an analysis of the contents of the appendix to the Report under review; but as a sample of the extremely valuable material contained in each of these Reports, we may simply mention the titles of the more important papers now before us. The first is an ample, though abridged, translation from the Swedish of a book by Holmgren, Professor of Physiology at the University of Upsal, on *Colour Blindness in its Relation to Accidents by Rail and Sea.* This is followed by a reprint of Henry's paper on *Colour Blindness*, from the *Princeton Review* for July, 1845. Then come translations of the *Annual Report on the Transactions of the Geneva Society of Physics and Natural History*, for the three years 1875, 6, and 7. There are nearly one hundred pages, under the heading *Ethnology*, of papers on the antiquities and aboriginal remains of America. This is always a prominent feature in these Annual Reports, and we know of nothing more interesting and valuable to the antiquarian and anthropologist than these detached papers, carefully illustrated, descriptive of the wonderful traces of the intelligence and laborious activities of past races of man left upon and in the soil of the vast continent of North and South America. The remaining hundred pages are occupied with *Notes on the History and Climate of New Mexico*, a paper *On the Change of the Mexican Axolotl to an Amblystoma*, and translations from various languages of *Short Memoirs on Meteorological Subjects.* We have thus endeavoured to atone for our long neglect of these excellent Reports. The second clause in the *Programme of Organiza-*

tion to which we have already referred, states, "The bequest is for the benefit of mankind. The Government of the United States is merely a trustee to carry out the design of the testator." They have fulfilled their trust most nobly. The work is a grand evidence of the unifying influence of the pursuit of science upon the spirit of antagonism which too often separates the nations of the earth.

The Student's Guide to the Medical Profession. By CHARLES B. KEETLEY, F.R.C.S. London: Macmillan & Co. 1878.

MR. KEETLEY would have gained more credit for honesty if he had clearly expressed in the title of this little book the fact that it is intended to induce students to go to the London schools, and to deter them from studying in those to be found in the provinces. He apparently finds it difficult to believe that a sound medical education is possible beyond the bounds of "the great city." The most he can grant in favour of provincial schools is that "some of the most accomplished men in the country have been wholly educated" in them; but he does not attempt to reconcile this admission with the astounding statement made on another page that "provincial students are, on an average, longer getting through their examinations than the London ones."

Mr. Keetley has evidently never heard of the Faculty of Physicians and Surgeons of Glasgow as a licensing body, as he omits its licence from his list of qualifications, and, what is more remarkable, seems also ignorant of the existence of the University of Glasgow, both in its teaching and degree-granting capacity; it is difficult to account for, and still more difficult to excuse, such omissions as these. His estimate of the cost of medical education will astonish many of our readers, since he thinks that £100 for board, lodgings, and pocket money for the winter and summer sessions is by no means too much, and calculates the total cost of board and education at about £700 on an average.

The chapter on medical education at Oxford and Cambridge Universities serves to show how utterly hopeless it is for any one to think of obtaining a complete medical education at those ancient seats of learning. An Oxford alumnus, who communicates the passages on that University, is fain to admit that "though facilities are given to students wishing to practise dissection of the human body, there is no regular school of instruction on that subject; but the structure of the skeleton, and the various organs of the body are regularly taught and demonstrated."

The only part of the book we have read with any satisfaction is that contributed by Mrs. Garrett-Anderson, being "a special chapter for ladies who propose to study medicine;" it is admirably worded, clear, and concise.

1. *Anatomography; or, Graphic Anatomy.* By William Darling, M.D., F.R.C.S., Eng., Professor of Anatomy in the University of New York. London: Baillière, Tindall & Cox.
2. *The Pocket Gray; or, Anatomists' Vade-Mecum.* Compiled especially for students. London: Baillière, Tindall & Cox. 1879.

Although the first of these is produced by a grave and learned professor of anatomy, we have no hesitation in joining it with the second, and referring both to that class of "cram" books, examples of which have become so numerous in recent years, and which threaten to do away with all scientific teaching of anatomy. Dr. Darling can lay claim to some originality, both as to the title and scope of his little book, but we doubt if students will gain anything from the perusal of it; certainly if they accept, without question, the statement that the *foramen ovale* of the cranial base is often absent, and that the *foramen vesalii* transmits a branch of a cranial nerve, they will lose more than they gain. The second work, if fortunate in possessing a double title, is unfortunate in respect of both titles being borrowed (we will not use a stronger term) from other works; thus, a little work, having much the same plan as this one, and issued by the same firm, was published a few years ago, by Dr. C. H. Leonard, under the title of *The Vest Pocket Gray*, while few students are ignorant of the fact that Erasmus Wilson's manual, which has been in circulation for the last forty years, is called *The Anatomists' Vade-Mecum.* It is quite possible that the present is a re-issue of Leonard's book in an altered form; if so, this should be clearly stated on the title page.

Vaccination Tracts. Preface and Supplement. London: William Young. 1879.

It is scarcely possible to give any serious notice of this work. Its honesty and general character can be sufficiently estimated by the heading of the first page—"Sir Thomas Watson Abandons Vaccination"!

REPORTS OF HOSPITAL AND PRIVATE PRACTICE.

WESTERN INFIRMARY.

REPORTS UNDER THE SUPERVISION OF DR. W. G. DUN.

FROM PROFESSOR GAIRDNER'S WARDS.

CASE OF MEDIASTINAL TUMOUR, SHOWING THE GRADUAL DEVELOPMENT OF THE DIAGNOSIS FROM PHYSICAL SIGNS—FATAL TERMINATION.—This case is interesting on account of the gradual manner in which the physical signs, indicative of mediastinal tumour, developed themselves, while the patient was under observation. The symptoms and physical signs were at first so equivocal that no definite diagnosis could be made, but, as the case progressed, the nature of it became quite clear, so that Dr. Gairdner was able to formulate the following diagnosis:—"Tumour probably solid and glandular, if not carcinomatous (but just *possibly* aneurismal), very near the heart, and, it may be, even partly within the pericardium (but not at any time leading to well marked pericarditis), and situated so as to compress or involve the base of the heart, the aorta, probably the pulmonary artery, and the vena cava superior, or some of its branches; also, but more recently, the nervous communications proceeding to the sympathetic in the neck on the right side, and probably also some part of the chain of lymphatics in the same region." It is rather remarkable that the recurrent laryngeal nerve on both sides seems to have escaped pressure, especially as the left lung was in some way or other involved in the disease. The best manner of presenting the case, perhaps, is to give brief summaries of the successive observations made by Dr. Gairdner.

P. Q., labourer, aged 26, admitted 7th November, 1879, a man of an apparently robust conformation, but evidently in a state of great debility; countenance livid, skin bedewed with sweat, pulse 110, very feeble, respiration 26; very appreciable orthopnœa; complained of pretty severe pain on the left side of the chest, apparently of the nature of "stitch" in respiration, of four days' duration. Up till three weeks before admission he was a perfectly healthy man; about this time he had a wetting, and following this, an illness characterised by swelling round the throat, apparently with some degree of difficulty of swallowing. From this he recovered in about nine days, and was sufficiently well to be able to resume work.

On examining the chest, at the date of admission to the hospital, the *left side* was found dull all over, with the exception of the summit behind, where the note was somewhat tympanitic. The respiratory murmur was impaired, but there was no evidence of effusion or extensive condensation. On the *right side*, over the mammary region, there was a limited area of very distinct friction, and over the front generally, percussion was superficially dull, the dullness, however, being easily penetrated by a stronger stroke; elsewhere, percussion was nearly normal. In front the respiratory murmur was rather deficient, but in the lateral region, and at the back, it was full and free. It was particularly noted that after the friction sound in the right mammary region had been present for many days, there was no evidence of fluid effusion or other change in the right pleura. At no time had pain been complained of on the right side. The cardiac sounds were deficient in tone, but not otherwise decidedly altered, unless at the base, where there was a prolongation of the first sound. There was a slight appearance of dilated veins on the front of the chest, and some puffiness of the lower part of the face, not, however, anything that could be called dropsical swelling.

10th November.—No very obvious change. Dyspnœa inconsiderable; notwithstanding this, the livid flush still continues on the lips and cheeks. The skin is moderately but uniformly bedewed with moisture. Urine very carefully examined, and found free from albumen. The condition of the left side of the chest remains as before. On the right side, friction still heard, but dulness less extensive, and percussion now almost normal over mammary region generally. At the base behind, respiratory murmur almost puerile, and free from râle. The measurement of the two sides is exactly equal—viz., $16\frac{15}{16}$ inches.

17th November.—The general condition of the patient seems somewhat improved, but there is no very marked alteration in the condition of the chest. On the left side, percussion is throughout better than at last report, and the respiratory murmur is also less impaired. On the right side generally, the respiratory murmur is still abundant, and at the base normal, if not puerile; in front, beneath the clavicle, and specially towards the sternal end, auscultation and percussion still faulty, but no râle heard. Friction still heard in mammary region. The heart's sounds are obscured, and no apex beat can be made out. The dilatation of the veins in front of the thorax continues.

25th November.—Friction over the right mammary region has disappeared. The tortuosity and undue filling of the veins of the chest seem even more marked than when first observed. The remarkable ruddiness of the countenance, inclining to lividity, is still as decided a feature in the case as ever, and the puffiness of the lower maxillary region hardly less than at first, this being wholly unaccompanied, as throughout, by any swelling of the limbs. Patient is feeling so much better that he desires to sit up.

10th December.—There has been some increase of difficulty in breathing, but, with this exception, it may be said that his general state has in no way deteriorated. Pulse 120, quite regular, but rather feeble for a man of his appearance. Respiration 32. From an examination of the chest, made to-day, it may now be regarded as established that there is a great extent of dulness in front of the chest on both sides, difficult to define on account of its extent, but, on the whole, corresponding very well with the idea of a mediastinal growth. The friction sound continues absent. An improvement has taken place in the condition of the left back, the dulness being much less marked, and the respiratory murmur fuller. On the right back the respiratory murmur is highly puerile. No râles or other phenomena indicating change in the lungs themselves. The measurement of the two sides is almost identical.

24th December.—There has been an aggravation of the puffiness of the face and general livid colour, with difficulty of swallowing referred chiefly to the right side. In addition to the vague puffiness of the neck, there is on the right side something like a more diffused solid resistance of the cellular tissues under the deep cervical fascia, strongly suggestive of some morbid infiltration other than œdema, and the finger conveyed into the pharynx detects a sort of padded condition of the post-pharyngeal cellular tissue. There is a considerable increase of dyspnœa and also decided orthopnœa, although the respiratory murmur is abundantly heard on the right back, and more abundantly than previously on the left back. On several occasions recently small quantities of blood have been observed in the sputum, but at present there is a distinct staining of the expectoration throughout; probably a new fact in the case. Pupils rather small, but no inequality. Pulse 120, rather feeble, equal on both sides.

27th December.—Striking feebleness of the pulse observed to-day in all the accessible arteries, with no very definite distinction between one side of the body as compared with the other, or between the upper as compared with the lower limbs. This possibly may be due in part to failure of the heart's power, but Dr. G. is disposed rather to consider it a sign of direct pressure on the vessels. The area of dulness centering at the anterior mediastinum seems to be extending, so that there is hardly any clear percussion in front of the chest at all. The left lateral region is also dull, but the right beyond the border of the *pectoralis major* is clear. Respiratory murmur still puerile at right back ; condition of left back largely improved. Complete absence of râle in every part of chest. Small quantity of bloody sputum still voided. The dilatation of the veins in front of the chest seems to be proceeding, and a trace of a similar condition can be observed at the back.

31st December.—For the last few days there has been observed for the first time a slight œdematous and doughy swelling of the right arm and hand. Œdema in front of thorax and neck, and of face, still continues. Blood still present in sputum.

2nd January.—Relative contraction of the right pupil observed, not great in degree, but probably constant since 31st ult. Dropsy of right arm still continues.

7th January.—Pulse very feeble, the left radial is, however, countable (124) and regular, but no comparison of the radial pulses can be made owing to the dropsy of the right arm. Voice has rather a treble quality, but is entirely free from huskiness. No laryngeal symptoms proper at any time since admission.

8th January.—The condition of the patient getting worse, and as no improvement was to be looked for, he was to-day removed by his friends, and died at home on the 13th inst.

The temperatures throughout the whole duration of the case presented little that is worthy of remark. As a rule, they were mostly normal, at times slightly above normal. The highest temperature registered was 101·8° on the day of admission.

It is to be regretted that a *post-mortem* examination was not possible in this case, as the succession of the symptoms and physical signs was closely watched for two months by the clinical class, and the diagnosis was gradually built up, as it were, by successive stages, every week advancing the information obtained, first, as to the existence ; secondly, as to the precise situation and anatomical relations of the supposed tumour. As to its precise pathological character, evidence is, of course, awanting ; but on the ground of probability, as derived from the narratives of similar cases in the pathological transactions of London and elsewhere, Dr. Gairdner thinks that lymphoma or lymphadenoma is the most probable hypothesis, and carcinoma a not improbable one. The case presents points of comparison and contrast with several others, now or recently under observation, and of which it is possible that a more connected account may be published. The well marked, though limited, pleuritic friction which was at first detected on the right side, and the equivocal signs pointing to a possibly older pleurisy on the left, raised interesting points and questions in diagnosis, which we cannot fully discuss at present, but which received much consideration, until the curiously complete evidence derived from the pressure signs carried irresistibly the conclusion ultimately arrived at.

GLASGOW ROYAL INFIRMARY.

Reports under the Supervision of Dr. J. WALLACE ANDERSON.

From Dr. Cameron's Wards.

The following are the notes which we took of a clinical lecture delivered one morning lately by Dr. Cameron.

AMPUTATION OF THIGH—EXTREME PAIN IN STUMP TWO YEARS AFTERWARDS—REMOVAL OF NEUROMA—RECOVERY.—I wish to speak of two cases which have occurred in Ward XVI. The first is that of a man admitted on account of a painful condition of a thigh stump. Two years ago he was run over by a tramway car and I had to amputate above the knee. The case did well, and he was soon able to walk about with an artificial limb. About six months ago, however, he began to feel a slight pain at the back of the stump, which quickly increased in severity. It spread up the back of the thigh to the buttock, and then across the back to the other hip. It soon became so severe that he could not walk, bend his back, or even turn from side to side in bed; the least movement of the limb was painful.

Apart from this painful and exceptional condition, there are various nervous phenomena connected with stumps, interesting in their physiological aspect. After amputation, there is always for a time the sensation of the whole limb being still there. In addition, there are often uncomfortable sensations. For example, after amputation of the leg the patient may complain of a burning feeling in the foot; he imagines perhaps that one toe is over the other, and may be kept awake at night by the effort to disentangle them. This is not a thing simply to be laughed at. It is sometimes a serious matter by disturbing the patient's rest. Generally these painful sensations pass off, however. You will observe, further, that the terminal part is usually the seat of these sensations. They will be located in the hand or fingers, not in the forearm: perhaps in one finger more distinctly than in the others. In the case of the lower limb, the patient may think the foot is next the stump and the leg away, and by and bye he comes to educate himself to the fact that the foot is at the end of the artificial limb. Again, the stump itself may be the seat of pain, or there may be choreic movements or jactitations in the limb, arising no doubt from nervous influence. In some cases it has been observed that during certain acts, *e. g.*, yawning, defecation, micturition, there may be pain in the stump. The affection in this patient was different. It was dependent on the growth of a distinct tumour at the divided end of the nerve. Probably in all cases the nerve becomes a little thickened and bulbous at its extremity, but sometimes a round substantial tumour forms, consisting mainly of nervous filaments and connective tissue (neuroma.) This may give rise to the most excruciating pain, and even nervous disease of a more general character, such as epilepsy or chorea; or the choreic movements may, as I have said, be confined to the stump. When the patient came to consult me, I thought such a neuroma might be present. I examined the stump and felt a tumour about the size of a horse bean in the situation of the divided end of the nerve, and which could be moved under the finger. When so handled it gave him sharp pain. He was re-admitted to Ward XVI, and having been put under chloroform, I cut down upon the tumour, found it at the extremity of the nerve and removed it. The nerve itself was thickened for a little way up, so I removed a portion, cutting it through where it seemed to be of normal size. No pain whatever has been experienced since he awoke from his chloroform sleep. Whether this satisfactory condition may continue or not I cannot say.

THE OCCURRENCE OF SCARLET FEVER AFTER A SURGICAL OPERATION OR INJURY.—The second case is that of a young lad, æt. 17, a farmer's son, who was admitted on 29th December last. His hand had got caught in a thrashing mill, and in consequence all the fingers except the little one, and the soft parts over the metacarpus, were severely lacerated. I removed two of the fingers. On the morning of the 30th he was dull and heavy looking, and yet the hand looked well. In the afternoon of the same day he was delirious, temperature 103° F., had passed urine in bed, and in the evening there was a crimson rash across the chest and on the inner surface of the arms. Next morning the rash had faded there, but had spread down the arms and appeared on the legs. He had sore throat and furred tongue; had been vomiting, and was in a high fever. On looking at the hand I found it perfectly aseptic, and he complained of no pain in it. I therefore concluded that it was a case of scarlet fever. In the afternoon he was seen by my friend, Dr. Russell, who concurred in the opinion, and we had him removed to Belvedere Fever Hospital.

The occurrence of scarlet fever after a surgical operation is very interesting. Sir James Paget directed attention to it several years ago. He noticed that the number of cases of scarlet fever occurring after surgical operations was out of all proportion to that occurring among surgical cases not operated upon, and concluded therefore that the fact of an operation having been performed brought the patient more under the influence of the scarlatinal poison. You know that after confinement a woman is peculiarly prone to such affections as septicæmia and scarlet fever. And her condition is in some respects comparable to that of a patient after an operation. Inasmuch as in her case the interior of the uterus is a wounded surface the analogy is complete. In both conditions, too, we have this peculiarity—the early appearance of the eruption. It may come out on the very day after the operation, as in the case mentioned by Paget of a boy on whom he had operated for stone. Referring to this early appearance, he says, "Two explanations may be offered of this fact. Either the condition induced in a patient by a surgical operation is one that gives a peculiar liability to the reception of an epidemic or contagious morbid poison, and any one of these, being imbibed immediately after the operation, produces its specific effect in much less than the usual period of incubation: or else those who suffer with scarlatina within a few days after operations had previously imbibed the poison, but would not have manifested its effects so soon, if at all, unless their health had been exhausted or disturbed."

On 19th November I saw a young gentleman, in consultation, who had, a short time previously, injured his bursa patellæ while playing at a football match in Edinburgh. On returning home he became very ill, and this illness was rapidly followed by the appearance of a well marked scarlet-fever eruption, with sore throat; at the same time the injured bursa inflamed and suppurated. It was about this abscess that I was asked to see him. Of course, the concurrence of the attack of scarlet fever, and of the inflammation of the bursa patellæ, followed by abscess, was, in this instance, a mere coincidence. This patient I saw almost daily up till 4th December, and subsequently visited him only once in three or four days, for the purpose of dressing the abscess. While in attendance on this case (viz., 4th December) I excised the elbow joint of a little boy, in one of the suburbs of Glasgow, not having seen the scarlet fever patient since the morning of the previous day. On 5th December the little boy vomited a great deal, and was very feverish, and at night his mother noticed a red rash on the skin. On the 6th, when I saw him in consultation with his medical attendant, he was covered with a distinct scarlet fever rash, and he had sore throat. From this attack of fever he recovered in due course, desquamating freely. I may say that his medical attendant, who gave him chloroform at the operation, was also in attendance on scarlet fever at the time.

As regards the possibility of my having infected the farmer's son, admitted into my Ward, I shall simply state the facts known to me which bear on the subject. It was on the afternoon of the 29th December that I saw him and dressed his hand. It had already been temporarily dressed by his medical attendant in the country. I had last seen the two scarlet fever cases in private practice, to which I have referred, respectively on 14th December (excision of elbow), and 27th December (abscess of bursa patellæ). On writing to the medical man, who had last dressed his hand in the country, as to any possible connection he might have had with scarlet fever, he replied that scarlet fever was prevalent in his parish and practice, but that he had not seen any case that morning, or on the previous day.

FROM DR. DUNLOP'S WARDS.

EPITHELIOMA OF PERINEUM—REMOVAL BY THERMO-CAUTERY. —E. B., æt. 50, was admitted to Ward XXIV, 30th September, 1879. For the last two years she has suffered from what is now found to be epithelioma of the perineum and neighbouring parts. Some months ago it was removed by the knife in the ordinary way, by a surgeon elsewhere, but soon returned, and latterly has spread very rapidly. The pain is sometimes excruciating, while at no time is she able to sit up with any degree of comfort, and even the act of stooping, not to speak of walking, gives her pain. She is therefore determined at all hazards to have it removed, if she might thereby gain a little temporary relief. On examination a large ulcerating tumour is found occupying the whole perineum, extending from the *sphincter ani externus* to the posterior commisure of the vulva, and invading also a portion of the vaginal wall. It extends fully two inches on each side of the middle line, and altogether its surface is as large as the palm of the hand. 8th October.—Patient having been put under chloroform, Dr. Dunlop removed the whole mass by means of the thermo-cautery. The skin and subcutaneous tissue were divided clear of the tumour on all sides. There was not a drop of blood lost, but, as might be expected, a very large, raw surface was left. A dressing of carbolised oil (1-10) was applied, and a morphia suppository ordered to be given from time to time, to prevent action of the bowels for a few days. The progress of the case was most satisfactory throughout. The large granulating surface contracted with great rapidity, and healed kindly; and quite within the fortnight she had complete control over the bowel. The parts in a few weeks were completely healed, and she could walk about without any inconvenience. She was dismissed well on 5th December.

NOTE ON DR. MORTON'S CASE OF AMPUTATION AT HIP WITH USE OF DAVY'S LEVER.—We were unfortunately unable in our last Number to give the result of the *post mortem* examination which was made by Dr. Foulis. It may be worth recording now that the cause of death was found to be an attack of pleurisy, combined with a diseased condition of the bladder and kidneys, probably consequent on stricture of the urethra. A careful examination was made of the parts pressed on by the lever, but not the slightest trace of congestion, bruising, or other lesion could be detected, showing that the lever may be used with the most perfect safety as regards the integrity of the parts in contact with it.

MEETINGS OF SOCIETIES.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.

Session 1879–80.

Meeting II.—7th Nov., 1879.

Dr. Fergus, *President, in the Chair.*

I. Venous Aneurism.

Dr. Morton exhibited a preparation of a Venous Aneurism, removed by the ecraseur from the inside of the thigh a little above the knee of a middle aged woman. The tumour resembled much a nut with a thin rind. The fibrin, which in arterial aneurism was laid down in layers, was in this case reticulated.

II. Treatment of Hooping-Cough.

Dr. J. W. Allan read a paper on the Treatment of Hooping-cough, which will be found at p. 93.

Mr. John Reid said that he had no belief in specifics for hooping-cough. Before they could treat it they must know what the disease really was. His own opinion was that it was nothing more than a bronchitis affecting the large bronchial tubes, and that the spasmodic form of the cough arose from an effort to get up the phlegm. In regard to remedies, chloral might do some good by its sedative action, but at the risk of setting up congestion, which might prove dangerous. The connection between inflammation of the larger bronchi and pertussis had been established by *post mortem* examination. In severe cases there followed great relief from leeches, blistering, and antiphlogistic treatment. Alum could act only by lessening the secretion from the bronchi. He had always been in the habit of treating hooping-cough like bronchitis, by antimonial wine, syrup of squills, &c. When the expectoration continued too long, he had seen great relief from the use of the mineral acids.

Dr. M'Call Anderson was of opinion that none of the medicines mentioned could be regarded as a specific. But it was not impossible that they might discover a specific for hooping-cough, which arose from a specific poison in the blood. In quinine they had a specific for intermittent fever. Dilute nitric acid, in very large doses (15 minims up to a teaspoonful every two hours), had been found to exert a marked effect in a certain proportion of cases of hooping-cough. If the disease had lasted for a considerable time, there was nothing better than a change of air.

Dr. Renfrew said that hooping-cough was one of the zymotic diseases—a class of affections which were due to the introduction of some organised substance into the body, previously, constitutionally or temporarily predisposed to take on the disease. The germs, having once got into the body, had the power of multiplying and increasing to an indefinite extent. In the current number of the *Nineteenth Century*, Dr. Maclagan, late of Dundee, now of London, had an article in which he advocated the theory that every one of these specific poisons had a nidus in which only it developed, the *locale* in hooping-cough being the lungs and air passages. He (Dr. Renfrew) had long held the opinion that zymotic diseases were thrown out, not by the ordinary excreting organs, but each of them at a particular locality. The substance thrown out set up a local irritation. In the case of pertussis this was in the lungs and air passages, the presence of the poison leading to an effort of nature to throw it off. This gave rise to the excessive cough, with crowing inspiration. In the case of measles the patient was seen rubbing the nose and eyes; then there was an explosive sneeze, with a quantity of discharge from the nose, and a rush of tears to the eyes. It was quite possible that the re-absorption of the poison might keep up a circle of infection. How could these germs be destroyed? He had himself been in the habit of using, for this purpose, a preparation of chlorine recommended by Sir Thomas Watson. If the spasms were very marked he used antispasmodics, such as belladonna, &c. In hooping-cough the poison seemed to irritate the superior laryngeal nerve, producing reflex action through the inferior or recurrent laryngeal nerve, and it was very useful to rub a liniment along the course of the nerve. If the catarrhal symptoms were prominent, the treatment should be directed to the removal of these by the usual remedies, and deriving to the surface by turpentine or mustard applications.

Dr. Morton said that the method pursued by Dr. Allan, of making separately a proper trial of various remedies, was the right way of advancing practical therapeutics. It was noteworthy that his cases, whatever treatment was employed, ran about the average time for the season of the year—viz., about six weeks. In cold weather they were generally more prolonged. Dr. Maclean's treatment, which had been adverted to, was analogous to the cold effusion treatment first tried by Dr. Currie of Liverpool, and taught by Dr. Hannah of this city. Hydrocyanic acid could be used in larger doses than those spoken of, as its effects went off in about a quarter of an hour.

Dr. Dun stated that carbolic acid, in the form of spray, had been tried by him with some benefit.

Dr. Watson said that Dr. Renfrew, in his suggestive remarks, had marked out the lines on which the therapeutics of hooping-cough were based. The poison of hooping-cough exercised its peculiar effect upon the pneumogastric nerve, and the characteristic symptoms arose therefrom. No doubt there was a poison in the blood; but there was alongside of this a local cause. The local remedy he had tried, with good results, was touching the throat with nitrate of silver. A mitigation of the whoop was a great matter, and there could be no doubt that touching the throat, as he had mentioned, had this effect. The treatment acted by deadening a little the sensibility of the branches of the sympathetic nerve which supplied the parts, and in this way lessening the local irritation. The treatment shortened the duration of the disease very considerably. Especially was it effective in that stage of what might be called nervous whoops. It was, no doubt, a troublesome practice, and this was the chief objection to it. Arnoldi's treatment, referred to by Dr. Anderson, of administering dilute nitric acid, appeared to have a beneficial general effect on the disease.

Dr. Perry referred to a view which had recently been put forth that the disease was probably due to the pressure of the bronchial glands (which were always enlarged in the disease), upon the branches of the pneumogastric.

The President said that there were two points of importance in regard to Dr. Allan's cases. The patients had all (1) change of air, which was beneficial in any stage, even at the commencement of the disease. The children had been removed from their own, perhaps squalid homes, to the well aired wards of Belvedere hospital. (2) The period of the year was in their favour. He would recommend that Dr. Allan continue his observations for the period, say from August to March. As to remedies, bromide of ammonium had a good effect.

III. THE ACTUAL CAUTERY IN SPINAL AFFECTIONS.

DR. GLAISTER read a paper on this subject, which will be found at p. 111.

Dr. Alexander Patterson said that there was no treatment better than the actual cautery in cases of this kind, and the treatment was now very common in such diseases. Mr. Syme, many years ago, applied the actual cautery in a case of morbus coxæ with immediate relief. The pain returned, and, the patient being in the North of Scotland and unable to induce the practitioners of the district to apply such a heroic remedy, he himself heated the poker, and sat down upon it.

Dr. Adam mentioned a case in which a slough was made by means of *potassa fusa* with good effect.

Mr. John Reid doubted the diagnosis in Dr. Glaister's cases. They appeared to be cases of what used to be called "spinal irritation." In his experience, spinal meningitis was accompanied by violent spasmodic symptoms, which eclipsed all the others. These cases of irritation were generally relieved by blistering and counter-irritation; and it was as a counter-irritant that cauterisation acted.

Dr. Renfrew said that in these cases blistering had disappointed him. Leeching was more useful; and so was cupping.

Dr. Perry said that he had very frequently used the actual cautery in cases of this kind, and with the best results. He might mention that he had also tried the same treatment in two cases of incipient phthisis; in one of them with marked success; in the other with less favourable results. The latter was, however, further advanced, and the success was only temporary.

Dr. Glaister, in reply, said, in reference to Dr. Patterson's remark, that out of hospital this treatment was very rarely used. Mr. Reid evidently confounded acute with chronic spinal meningitis. In the former no one would dream of applying the cautery. In his cases, blistering, hypodermic injections, &c., had been tried without any effect before he resorted to the cautery.

GLASGOW PATHOLOGICAL AND CLINICAL SOCIETY.

SESSION 1879–80.

MEETING III.—11th NOVEMBER, 1879.

DR. ALEXANDER ROBERTSON, *President, in the Chair.*

DR. MACEWEN showed TWO PATIENTS ON WHOM TREPHINING OF THE SKULL HAD BEEN PERFORMED for the relief of symptoms, in the one case, the sequents of injury, in the other, the result of disease.

The first was a boy, who had fallen over a window 12 feet from the ground. He was brought to the Glasgow Royal Infirmary immediately after the accident, when the only observable peculiarity was a vacancy of expression, which was so slight as to be scarcely recognisable by his mother. He was kept completely quiescent in bed, and carefully watched. On the second day, discoloration showed itself in the right lower eyelid, and gradually spread upwards until the tissues round the eyeball were completely involved, as well as the conjunctiva itself. The head was then shaved, and a discoloured part, half-an-inch in diameter, was found on the right side, under which a slight osseous irregularity was felt in the skull, as if from slight separation of the right coronal suture.

On the sixth day, twitchings commenced in the left eyelids and left side of face, accompanied by semi-insensibility. This attack was of short duration. Next morning the twitchings began in the same way, but extended to the left arm and left leg, the consciousness being entirely in abeyance. After these twitchings had continued for some hours, the right side of the face, the right arm and right leg gradually became affected; the twitchings became stronger, until they ended in what might be termed a general convulsion, which lasted until operative interference was resorted to. During this time the temperature ran up as the convulsive seizure developed.

The symptoms pointed to disturbance on the right side of the brain. The infiltration into the orbit and surrounding tissues, coming on in the manner in which it did, indicated an effusion of blood, probably inside the dura mater. The discoloration which appeared on the right side of the head, accompanied by the underlying slight osseous irregularity, pointed to a probable *locus* for this cerebral disturbance. As the condition of the patient was serious, and the prognosis, if left alone, extremely unfavourable, an operation was determined upon. An incision was made so as to expose the above mentioned irregularity; it was found to be a fissured fracture of the skull. There was nothing in this fissured fracture to account for the symptoms. A disc of the skull was then removed, the inner surface being smooth and not splintered. The dura mater bulged into the trephine aperture, and there was no cerebral pulsation seen or felt. Ten minutes were allowed to elapse, with the hope that the cerebral pulsations might return. As they did not do so, and as there appeared to be a something intervening between the brain and the dura mater, the latter was incised, and about a couple of ounces of effused blood, partly coagulated and partly fluid, escaped with a gush. After the lapse of a few minutes, the cerebral pulsations became distinct, and soon were thoroughly established; blood and serum oozed during the first twenty-four hours, after which the wound quickly cicatrized. The convulsions stopped during the operation, and never appeared again. His temperature fell soon to its normal, and the boy has never had a bad symptom since (now over six months).

The next patient was one from whom a tumour was removed from the dura mater. The appearances and symptoms were, contraction of the left pupil; a small tumour bulging from under the supraorbital plate of the frontal bone; a severe and persistent attack of convulsions, commencing on the right side of face, then affecting the right arm, next the right leg, then gradually becoming general, and the temperature meanwhile running up. The respiration and pulse became seriously affected. Trephining was then resorted to, the particular *locus* being determined by a pea-like nodule found on the left side of the frontal bone. The bone was found very thick and soft. A disc was removed, and under it was found a tumour of the dura mater which, though very prominent at this part, extended in a flattened form under the skull for some distance round, and especially down toward the growth above the left eye. It was dissected carefully out, following it down to near the orbital plate of the frontal bone, outside of the dura mater, and then removing the portions of the supraorbital tumour from the outside.

Only on one occasion after the operation (third day) did the convulsions return, and it was supposed that they had origin in pressure of the dressings. After the wound was re-dressed they disappeared. There has been no return of them since. The right arm and leg were paralysed, but they have gradually regained their power, so that now she can walk well, and use the right arm freely, though it is not so strong as the left. It is now about four months since the operation.

Dr. Foulis, who examined the tumour microscopically, said it might be a gumma, but the appearances were not unequivocal.

Dr. Dougall showed, for Dr. Ferguson of Peebles, a specimen of DEPRESSED FRACTURE OF THE SKULL, caused from a blow by a brick. The fracture was about 1½ inch in length and an inch broad, extending through both tables and depressing the bone about half an inch. The inner table was much splintered.

DR. DOUGALL also showed a UTERUS CONTAINING A SIXTH MONTH FŒTUS, with the placenta *in situ*. It was removed from a woman who had died suddenly from cerebral hæmorrhage. The uterus and all its appendages were quite healthy.

DR. GEORGE BUCHANAN exhibited a portion of BONE REMOVED FROM A RECENT FRACTURE OF THE SKULL, showing the groove for the longitudinal sinus, the patient having recovered. It was taken from a man aged 40, who was struck on the forehead, near the root of the nose, by a piece of wood. Both tables of the skull were fractured. He extracted the fragment. The bleeding was pretty profuse. The wound was lightly dressed, and the patient never had a bad symptom.

Dr. Robertson said he had seen the boy operated on by Dr. M'Ewen, and he had thought trephining warrantable.

Dr. Cameron said it was a very difficult question as to when trephining should be practised. Before the days of antiseptics there was no trephining in fracture of the skull unless symptoms of compression were present. It was a question as to whether this might not be modified now. No doubt recovery sometimes followed depressed fracture, but there were often ulterior evil consequences. But concussion of the brain might lead to like injurious results, such as loss of memory. He had had a series of cases of depressed fracture in which in after years no brain mischief ensued. Each case, however, must be dealt with on its own merits.

Dr. George Buchanan did not think trephining should be performed in a case exhibiting no brain symptoms. It should only be done in cases where you judge the cause of the symptoms can be removed. He thought Dr. M'Ewen's cases illustrated the symptoms calling for operative interference.

Dr. Finlayson remarked on the elevation of temperature in convulsions due to any cause except uræmia.

Dr. Knox remarked on the evil effects that might result after fracture of the skull. He had a case of a boy with fracture of the vertex, but no symptoms to indicate brain implication. He recovered apparently completely, but he returned three months later suffering from epileptic fits. No history of epilepsy previous to the accident.

Dr. M'Ewen thought surgeons did not watch their head cases long enough, and so the evil after-effects might not be observed. Even in cases where there was no fracture, if the symptoms were such as to indicate the situation of the irritation he thought trephining might be resorted to.

The Secretary showed for Dr. Newman, specimens illustrative of the chemical composition of the dark bands of muscle. After pointing out the microscopic appearances of muscle in its different conditions—(1) shortened and at rest, (2) stretched and contracted, (3) expanded and at rest, and (4) shortened and contracted—the following points were discussed:—1. The absence of transverse striation during perfect rest; its gradual appearance, first as a broad, dark transverse bar with a double contour, afterwards becoming narrow, the breadth being in an inverse ratio to the amount of contraction; also, that during a state of rest the whole fibre appears doubly refractive, and that only when contraction has taken place the alternating stripes possess the property of single refraction. 2. The diminution of the longitudinal as associated with increase in the transverse measurement of muscle without any loss of volume. 3. The absence of longitudinal striation in a state of rest, and its appearance during contraction of the muscle. 4. The appearance of the thin dark lines or basal membranes in relaxed muscle, and in muscle that is stretched and contracted, and their absence when the muscle is shortened and contracted. Microscopic specimens were shown illustrative of the composition of the broad dark bands (anisotropic material). It was demonstrated that, by the addition of certain reagents, such as hydrochloric acid solution (·1%), soda solution (·1%), acetic acid (·5%), &c., a considerable number of the fibres are so altered that their essential characteristics are lost, the fibrillæ and transverse striation being no longer perceptible. Where these changes have taken place new forms manifested themselves in the shape of small spheroidal or irregular shaped highly refractive bodies (from ·00077 to ·001 mm. in diameter), which, so long as the histological structure of the muscle was not entirely destroyed, were found to be deposited in rows corresponding to the situation of the broad dark bands. These small masses were further shown to be composed of fatty matter, and supposed, when the muscle is alive and at rest, to be held in solution by the *Muskel-kästchen* fluid, and to form the broad dark bands. The amount of this so called combined fat was stated to amount to ·523 % of the weight of the muscle, whereas the fat separable by the direct action of ether only equals ·115 %.

For details see *Journal of Anatomy and Physiology.* Vol. xiii, p. 549.

Dr. Clarke showed a vesical calculus removed by lithotomy from a man aged 21, who had suffered from symptoms of two years' duration. In the centre the calculus had five nuclei formed of blood clot, round them a deposit of uric acid and phosphates. The greater part of the stone was phosphatic.

Dr. George Buchanan showed a preparation of the external iliac artery ligatured by catgut, in which the artery became pervious after complete obliteration of pulsation, the catgut ligature remaining perfect. (The details of this case will be found at page 423 of the December Number of this *Journal*).

GLASGOW SOUTHERN MEDICAL SOCIETY.

Session 1879–80.

Meeting II.—27th November, 1879.

Mr. Niven, *President, in the Chair.*

Dr. Dougall showed (1) a portion of cranial bone containing a depressed fracture; (2) a specimen of the cysticercus of tænia solium, removed from the liver of a mouse which was supposed to be pregnant; (3) uterus, ovaries, &c., removed from a woman who had died at the sixth month of pregnancy. The uterus was opened in front, showing fœtus and placenta *in situ.* The cicatrix of a ruptured Graafian vesicle was visible on the surface of the left ovary, and the placenta was situated on the left side of the uterus. The cord was attached near the margin of the placenta. The patient had been found dead in bed. At the *post mortem* examination a large clot of blood was discovered in one of the ventricles of the brain.

Dr. Park suggested that the immediate cause of death was atheroma of the arteries, as the woman had died while making no unusual effort of a physical nature.

Dr. Stirton said that he would have expected the corpus luteum to be larger at the sixth month; it is known, however, to dwindle more rapidly in cases of abortion, a fact which, in his opinion, made it likely that the child had died some little time before the mother, and he was accordingly inclined to associate the result in the brain with septic poisoning, from the dead fœtus.

Dr. Hall showed a two months' ovum complete in its membranes.

Dr. Park showed a small myxomatous tumour which he had excised from the submaxillary region. It was originally situated somewhat deeply under the submaxillary gland.

Mr. Gilmour showed for *Dr. Dunlop* a specimen of ruptured thoracic aneurism, which the latter had obtained from the body of a commercial man who had been found dead in bed.

The *post mortem* examination in this case showed that death had been caused by internal hæmorrhage from a ruptured aneurism springing from the thoracic aorta at a point just above the diaphragm. The whole lining of the aorta was changed by atheromatous deposit. Immediately inside the unopened portion of the aorta there were two small typical deposits; they were quite recent, and were seated in the connective tissue between the inner and the middle coats. Passing downwards in the open part of the specimen, the inner coat was seen to be roughened and very much thickened, and here and there hard calcareous plates could be felt. Towards the dilated portion of the vessel it was observed that the inner coat had given way all round, leaving only the middle and external coats to resist the outward pressure of the blood column. Where the inner coat terminated, its circular edge was thickened and turned in upon itself. The circumference of the thinned and dilated portion, in the centre of which is the radiate or stellate rent, resembled somewhat the edge of a chronic indolent ulcer. The deceased had been about 50 years of age, and, so far as could be learned, of sober habits. Atheroma is more frequently met with in the arch of the aorta than in any other part of its course; rupture of an aneurism of the first part of the aorta causes immediate death from bleeding into the pericardium. This is the only case in which Dr. Dunlop has found a ruptured pouch in the lower part of the thoracic aorta.

Dr. W. Macfarlane exhibited three ossifications which were found embedded in the dura mater of a lunatic. They were situated at the superior longitudinal sinus and falx cerebri, near the vertex of the brain. These formations are in general rather more than one millimetre in thickness; the largest of them is fourteen millimetres in length and seven in breadth. The bone of which they are composed is of almost ivory-like density, and their general appearance, especially under a magnifying glass, is somewhat that of intricate lattice work. They have spine-like projections from the margins, and seem to be formed of slender spiculæ of bone. The spiculæ frequently become free towards the edges of the plates, and then sometimes divide into two, or three, or four spine-like terminations. The case in which they occurred was that of a woman who died in Merryflatts Asylum last winter, after an illness of about four months' duration. When admitted, about three months prior to her death, she was blind, or nearly so, from glaucoma. Her stated age was 62, but her apparent age was more like 70. There were distinct, but not extreme signs of general arterial degeneration. She was under numerous delusions, such as, that there was a load of coals on her back, and that her house had been flooded with water. Her memory was extremely defective. She was very incoherent and talkative, often babbling in a low tone to herself. As a rule, she slept badly. At times she became considerably excited and restless, and then required some restraint. There was marked loss of muscular power, with a tottering gait and shakiness of the upper extremities. The above were the chief features of her illness, till the week preceding her death, when there occurred a gradual breaking up of her general health. The *post mortem* appearances clearly indicated that her illness and death were the result of chronic inflammation of the meninges.

MEDICAL ITEMS.

UNDER THE DIRECTION OF

ALEX. NAPIER, M.D.

Physiological Action of Drugs on the Secretion of Bile. —Professor Rutherford, of Edinburgh, presents, in *The Practitioner* (November and December, 1879), an abstract of the results arrived at by him in the course of a lengthened experimental inquiry with reference to the above subject. Dogs exclusively were selected for experiment. The mode of procedure was as follows:—All the animals had a full meal of lean meat in the afternoon, and the experiment was begun next morning, between nine and ten o'clock, when digestion and the absorption of food were completed, and the stomach was consequently empty. The use of chloroform being inadvisable on account of its powerful stimulating effects on the liver, curara, which was first proved to have no influence on the biliary secretion, was injected into a vein to prevent irregular muscular movements; this necessitated the keeping up of artificial respiration throughout the whole experiment. Through an opening in the linea alba a glass cannula was inserted into the common bile duct near to its junction with the duodenum, and tied therein; to the cannula was attached a short caoutchouc tube, through which all the bile secreted was caused to flow. Nearly all the drugs then given were injected directly into the duodenum. The observations thus related solely to the effects of substances on the *bile secreting*, not to the *bile expelling* mechanism, and tend to show—1. That there are substances which depress the secretion of bile. To this group belong purely intestinal stimulants, which cause a copious secretion from the intestinal glands, *e. g.*, sulphate of magnesia, sulphate of manganese, castor oil, gamboge, calomel, ammonium chloride, and acetate of lead, the latter salt seeming to exert a directly depressant effect on the liver. 2. That there are substances which stimulate the liver, and either do not stimulate the intestinal glands at all, or only to a trifling extent. To this group belong ipecacuan, sodium benzoate, ammonium benzoate, sodium salicylate, ammonium phosphate, and dilute nitro-hydrochloric acid. 3. That there are many substances which excite both the liver and the intestinal glands. To this group belong iridin, euonymin, podophyllin, phytolaccin, baptisin, hydrastin, juglandin, leptandrin, sanguinarin, colchicum, rhubarb, aloes, colocynth, jalap, sodium phosphate, sodium sulphate, potassium sulphate, Rochelle salt, and corrosive sublimate. Professor Rutherford believes that the effect of hepatic stimulants is to be assigned to a direct action of their molecules upon the hepatic cells or their nerves, not to reflex excitement of the liver from irritation of the mucous membrane of the small intestine, as many substances powerfully irritate the intestinal mucous membrane without in the least increasing the biliary secretion, while others powerfully stimulate the liver without inducing notable excitement of the intestine. The most remarkable discovery made was that while calomel does not excite the dog's liver, corrosive sublimate stimulates it powerfully. Calomel produced a purgative effect, from its action on the intestinal glands, but the biliary secretion was actually diminished rather than increased. In reference to the suggestion that calomel, when introduced into the stomach, is changed into corrosive sublimate in sufficient quantity to excite the liver, while the unchanged salt stimulates the intestinal glands, it was shown that if 5 grains of calomel be subjected at 100° F. for *seventeen hours*, to the action of dilute hydrochloric acid of the same strength as that of the human gastric juice, not more than 1-35th grain of corrosive sublimate is produced. When the calomel was introduced into the stomach also, the result was entirely negative; after death it was found apparently unchanged, enveloped in the gastric mucus. But after all it is frequently said that "the liver of a dog is not that of a man," and that if we discover that a certain drug stimulates the healthy liver of a dog, it does not follow that it will also stimulate the healthy human liver, still less do we conclude that it will act similarly in disease; the most that can be asserted is that such a substance will be *likely* to act in this way. It should be noticed, however, that the vast majority of the experimental results obtained, and those of clinical experience, are in striking harmony with each other; it was found that, with the exception of calomel, every substance having any reputation as a cholagogue in man, increases the biliary secretion in the dog. Though it is possible that "the human liver may be more or less susceptible than the liver of a dog to the influence of various substances, we maintain that up to this time there *is really no proven discord* between our results and those arrived at by observations on man."

Hypodermic Syringe as an Aid to Diagnosis.—Dr. David Drummond, Lecturer on Clinical Medicine at the Newcastle-on-Tyne Infirmary, gives details of three cases in which he employed the hypodermic syringe as an aid to diagnosis. The first was a case of aneurism, with physical signs of effusion of fluid into the left pleural cavity; the syringe showed there was no fluid, but a solid lung, which led to the conclusion that the left bronchus was pressed upon by the aneurismal sac, and this was afterwards verified at the *post mortem*. In the second case, cancer of lung and liver was suspected, and the syringe drew off characteristic cells; and in the third case, it demonstrated pus in the kidney, which was afterwards aspirated with good result.—*Dublin Journal of Medical Science.* January, 1880.—J. C. R.

Chrysophanic Acid: its Source and Properties.—Dr. J. de Aguiar has just published, at Bahia, a pamphlet which satisfactorily clears up the mystery which has so long attended the natural history of the drug, and definitely settles the true source of "araroba" (Goa powder). He traces it to *Andira Araroba*, N.O. Leguminosæ, one of the larger intertropical trees met with south of Bahia. The wood has a yellow colour and is very porous, having numerous longitudinal canals visible to the naked eye. The trunk, in a transverse or tangential section, presents lacunæ, more or less large, according to the age of the tree, and in these a pulverulent substance (araroba) is found. Dr. de Aguiar believes it to be formed by the oxidation of the resin, which exists in great abundance in the tree. It is corrosive in its action, and sets up a form of conjunctivitis in the workmen who collect it. Dr. Peckholt reported, in 1873, that he had obtained the pure acid from another source—the wood of the Brazilian Ipé tobacco tree. A decoction of this wood is used in Brazil for ringworm, and a decoction of the bark, internally and externally, against herpetic affections, and as a gargle in angina tonsillaris. Chrysophanic acid is soluble in benzol, chloroform, turpentine, and in the fixed and volatile oils to a large extent; sparingly soluble in ether and alcohol, and insoluble in water, glycerine, and in solid paraffin. It is dissolved by sulphuric and nitric acids, caustic potash, and ammonia. Ol. jecoris dissolves twice its weight of the acid, yielding a mixture containing 70 per cent. Ol. olivæ, ol. pini sylvest., creasotum, ol. terebinth., ol. lavand, and vaselin, dissolve readily their own weight of acid, yielding mixtures containing 52 per cent. Taking advantage of its solubility in the fixed oils, a considerable saving may be effected in preparing ointments direct from araroba. Ol. olivæ thoroughly exhausts that substance, yielding the acid, after removal of the oil by ether, in a state of purity. Lieberman and Seidler have arrived at the conclusion that the substance originally contained in Goa powder is not chrysophanic acid, and that the chrysophanic acid actually obtained by Attfield was an altered product derived from the substance originally formed in Goa powder, and to which they propose to give the name of chrysarobin. Adopting the formula $C_{30}H_{26}O_7$ for the latter, and taking into consideration the results obtained in some experiments to ascertain the amount of oxygen absorbed by chrysarobin during its conversion into chrysophanic acid, the authors represent the reaction by the following equation:—

$$\underset{\textbf{Chrysarobin.}}{C_{30}H_{26}O_7 + 2\,O_2} \quad = \quad \underset{\textbf{Chrysophanic Acid.}}{3\,H_2O + 2\,C_{15}H_{10}O_4}$$

(*Pharm. Journ.* March, April, May, and July, 1879. And Dr. W. G. Smith, *Dub. Journal Med. Sci.* December 1879.)—J. W. A.

Treatment of the Vomiting of Pregnancy.—Dr. J. W. Hickman thus embodies the results of his experience in the treatment of this troublesome affection. Oxalate of cerium is more or less efficient in a vast majority of cases, when properly used; 10 grains, the dose advised by Simpson, not the trifling officinal dose of a grain or two, should be given as frequently as necessary, care being taken to give the first dose half-an-hour before the patient's rising time. Bismuth has been prescribed with oxalate of cerium, with but unsatisfactory results. The best form in which to give bismuth is in combination with carbolic acid; thus:—

R	Bismuthi Subnitr.,	ʒiii	
	Acidi Carbol.,	gr.ii-iv	
	Mucil. Acac.,	℥i	
	Aq. Menth. Pip.,	℥iii	Misce.

Sig. A tablespoonful three or four times a day.

Arsenic is a remedy of some value in this condition, in the shape of Fowler's solution, one drop before each meal. Where there is simply nausea without vomiting, attended with vertigo, half drop or drop doses of the tincture of nux vomica, in a little water, are extremely serviceable, particularly if the bowels be torpid. An excellent preparation, when calumba seems indicated, is the following:—

Calumba Gentian Root,	āā℥ss	
Ginger, Rhubarb,	āāʒi	Mix.

Make a pint or pint and a half of infusion.

This will be found more serviceable than many more elegant preparations. An *old* opium pill sometimes checks the vomiting at once. A blister to the epigastrium, powdered afterwards with morphia, is at times effective. If prostration be severe, champagne often exercises an admirable influence. 20 grains of chloral, injected into the rectum night and morning, will often succeed in stopping vomiting; only 3-5 injections are necessary. The most reliable remedy of all, however, is *ingluvin*—the lining membrane of the chicken's gizzard. It may be prepared by any one thus:—The membrane should be lightly scraped, never washed, then dried at a moderate temperature, and in an hour or two it may be powdered as fine as flour. It should be given before meals, in doses ranging from 5 to 30 grains. The final remedy, when everything else has failed, and the prostration is dangerous in degree, is the induction of premature labour.—*Med. and Surg. Reporter.* 13th December, 1879.

Treatment of Diarrhœa by Cold Water Enemata.—An account is given in the *Deutsche Med. Wochenschrift* of September, 1879, of this method of treatment, recommended by C. A. Ewald in his work, *Die Lehre von der Verdauung.* For some years the author has treated those forms of diarrhœa, especially of children, which depend essentially on an alteration of the large bowel, solely with injections of cold spring water, and some indifferent medicine (hydrochloric acid or soda). After each motion a clyster of about eight fluid ounces of cold water is administered, which is again discharged by slight pressure on the abdomen. About two ounces are then to be injected and retained. The results are astonishingly good, and mothers more easily adopt this mode of treatment than could be imagined. Ewald was only twice able to employ such injections with adults, and both times with good results. Messemer (*Cold Water Enemata. American Journal of the Med. Sciences.* July, 1878,) has also found this treatment very satisfactory. Whether it acts by washing away irritating substances, or by diminishing peristaltic action is uncertain. It has certainly one great advantage—it costs nothing. W. G. D.

Quinine and Aconitine in Facial Neuralgia.—The therapeutic action of crystallised aconitine in facial neuralgia is very remarkable. There are, however, some cases which partially resist its action. In these the principal symptom is the infra-orbital pain, and they present a marked periodicity. The sulphate of quinine and aconitine are useless in these cases if used separately, but together they produce a rapid and certain effect. M. Laborde prescribes them with success as follows:—

℞ Quin. Sulph., 0·20 c.g.
Nitrat. Aconitin. cryst., ¼ of a milligramme.
Pulv. Cinchonæ, q. s.

For one Pill.

Sig. Four or five pills to be given altogether in the 24 hours, with an interval of not less than 4 hours between each pill.

—*Lyon Médical.* 7th September, 1879.—J. M.

Ammoniacal Sulphate of Copper in Neuralgia of the Fifth Pair, by Ferreol.—For a long time this medicine has passed as a quasi-specific for epilepsy. Tried in other cases of neuralgia than those of the fifth pair it has always failed, but of the latter the author reports four favourable cases. The congestion in particular is favourably influenced by it; the swelling and running from the nose become less. Afterwards a state of depression is produced, sometimes accompanied by nausea. Férréol administers it as follows:—

Aquæ destillat., - - - -	100
Syr. Aurantii, - - - -	30
Cupri. Sulph. Ammon., -	0·10 to 0·15

To be taken in the 24 hours, at meal times. In spite of the metallic taste and the fœtor of the breath it is necessary to continue that dose for not less than 12 or 15 days.—*Lyon Médical.* 10th August, 1879.—J. M.

Treatment of Pigmentations of the Skin in Pregnancy, by Chrysophanic Acid.—It is known that chrysophanic as well as pyrogallic acid is much employed in psoriasis. The former is also used by Neumann and Braun, of Vienna, in the pigmentations of pregnancy. The formula is—

Acidi Chrysophanici,	gramme i.
Ung. Simplicis,	grammes 40

The spots are washed, and a light inunction practised every second day for six days. This ointment is very irritating, and there is occasionally much swelling and smarting after the inunctions. The parts become first red, then black, the epidermis and rete Malpighii fall away, and the pigmentary spots disappear.—*Paris Médical.* 11th September, 1879. *Lyon Medical.*—J. M.

Removal of the Uterus by a Midwife without Fatal Result.—A woman, aged 29, had been easily and quickly delivered of her ninth child; the midwife attempted, by dragging at the cord, to remove the placenta, but not succeeding in this she quickly extracted it by passing her hand into the uterus. As the placenta, however, seemed to her very small, and as constant hæmorrhage was going on, she again introduced her hand, and finding on the left side a large round easily movable body, she pulled it out. Syncope and severe hæmorrhage followed. The supposed tumour proved to be the uterus, which had been torn away rather below the os internum. On exploring the vagina coils of intestine were felt. The treatment consisted in washing out the vagina with a 3 p. c. solution of carbolic acid; on the fifth day the temperature was normal, and on the twenty-first day the vagina was found, on examination with the finger, and later on with the speculum, completely closed at the upper part. After recovery a remarkable and inexplicable symptom developed, namely, thirst so great that during the day she drank about 30 pints of fluids, and during the night at least 12 pints. Under the constant use of salicylic acid this symptom disappeared in about a year. During this period the quantity of urine was correspondingly increased, but neither sugar nor albumen was detected.—*Deutsche Med. Wochenschrift.* November, 1879. W. G. D.

On the Operative Treatment of Harelip.—Mr. Wheeler, F.R.C.S.I., Surgeon and Lecturer on Operative Surgery to the City of Dublin Hospital, in an excellent paper on the above subject, gives details of fourteen typical cases from a large series of those upon whom he has operated. They illustrate the principal varieties, and their value is much enhanced by the coloured lithographs, before and after operation, which accompany them.

In referring to the best time to operate, Mr. Wheeler says that, while he considers that every case should receive careful special consideration as to its circumstances, he would choose "from three to six weeks after birth, and within three months." He does not consider dentition an insuperable objection to operation, if the child is fairly healthy. With reference to the treatment of the intermaxillary bone, he adopts the method pursued by Professor G. Buchanan of this city—viz., bending it down between the maxillæ and uniting it to their edges by firm suture. This he has found most successful, even although the central wedge did not accurately fit, and this accords with Dr. Buchanan's experience.

Mr. W. prefers the twisted silk suture with harelip pins, and he dwells upon the importance of the careful introduction of the lower needle to avoid notching. He always supports the parts with adhesive plaster and collodion, which he regards as superior to any instrument. He prevents hæmorrhage by arterial compressors applied on each side of the lip; judging from the woodcut, they are much the same as those used by Professor Macleod, with this difference, that they are broader and toothed in the blades.

Mr. W. always employs scissors, with the lower blade sheathed, to raw the edges of the lip, which he considers an advantage, because the operator can gauge exactly the amount of tissue cut, while the solidity of the lower blade enables him to sever it at one stroke; there can be no contusion, and the posterior edge cannot be bevelled.—*Dublin Journal of Medical Science.* January, 1880.—J. C. R.

Salicylic Acid in Infantile Eczema.—Dr. T. v. Genser, of the Foundling Hospital, Vienna, is quoted as follows in the *American Journal of Obstetrics*:—Treatment with ointment of salicylic acid is eminently successful in cases of *moist* eczema. The diseased regions treated by it quickly dry up; the skin, at first deeply reddened, repeatedly scales off, and becomes thereby paler and paler, until it is restored *ad integrum*. This application causes more or less burning for a short time, but this soon ceases. It does not, however, prevent the formation of new vesicles at the periphery, that is, the extension of the eczema. The ointment is of less value in the dry scaly form of eczema (e. squamosa), which so often occurs on children's faces. In intertrigo the ointment has given good results. It has been used also in dermatitis exfoliativa, and is most beneficial in the dry form of the affection.—*Med. and Surg. Reporter.* 22nd November, 1879.

Acute Peritonitis without increase of Temperature.—At the commencement of an attack of acute peritonitis we generally expect a rise in temperature, and by some it is regarded as an invariable accompaniment of this affection; but it is not, however, always present, as M. Lapponi has pointed out in a recent communication. M. Andral had previously directed attention to a case of traumatic peritonitis, in which there was an absence of fever, but as no thermometer was used, the hand only being employed to judge of the temperature, the case lost its value. But the two cases here published by M. Lapponi leave no doubt on the matter. The first case was one of pneumonia, and some time afterwards the patient was seized with severe abdominal pain, nausea, dysuria, and constipation. Eventually abdominal fluctuation showed itself. The patient died, and the *post mortem* revealed tubercle of the pulmonary organs, and of the peritoneum, the tubercles in the latter having set up very severe peritonitis. In the second case, that of a man aged 27, there was a train of symptoms similar to the above, but an entire absence of abdominal friction and of fever. The autopsy verified the diagnosis of acute peritonitis. In neither of the above cases was there any increase of temperature. To explain this absence of fever, M. Lapponi calls to his aid the researches of Jacobson, Claude Bernard, and Goltz, and his theory is that the inflammatory irritation in the abdominal cavity attracts there such an accumulation of blood that the nutritive processes in the abdomen become more active, and in this way nutrition, and with it the temperature, is diminished in the rest of the system. Whatever be the explanation of the occurrence, M. Lapponi's communication is of interest, and shows that the absence of fever in acute peritonitis is not uncommon.—***Le Progrès Médical.*** **30th August, 1879.—G.T.B.**

The Treatment of Intermittent Fever by Pilocarpine.—Dr. H. Rokitanski, in the *Med. Jahrbücher*, 31st March, 1879, and Dr. Gaspard Griswold, in the *New York Med. Record*, 10th August, 1879, record some excellent results obtained by the employment of pilocarpine in intermittent fever. The former, for example, narrates a case in which the fourth attack of ague was cut short almost at once by an injection of about ⅓ gr. of pilocarpine, the previous attacks having continued, in spite of the usual treatment, for many months. "These results having been questioned," says Professor Picot, Bordeaux, "I have carried on a similar investigation in my hospital practice. The results seem to me so remarkable that I have thought it right to publish them, although the observations are few in number. I have come to the conclusion that the nitrate of pilocarpine is a febrifuge of extreme power, a small dose, 1 centigramme to 15 milligrammes (about 1-7th to 1-5th grain), preventing the febrile accession, and very often cutting short the attack of ague itself, reducing at the same time the volume of the spleen." Professor Picot gives the four cases on which he has based the above opinion, the first of which may be shortly noted as an example. Patient was a well developed, though decidedly anæmic man, æt. 47. Since 23rd August last he had been suffering from a distinctly marked quotidian ague which, notwithstanding the vigorous use of emetics, cathartics, and quinine, continued until his admission on 28th October. On the following day, after the administration of a purgative, 1 centigramme (about 1-7th gr.) of nitrate of pilocarpine was injected under the skin of the fore arm. In two minutes salivation had set in, and the patient was covered with perspiration. Fully 12 ounces of saliva were secreted. In an hour and a half salivation and sweating ceased; no fever, and the patient perfectly calm. There was no return of the fever, and only the anæmia remained for further treatment. On the 10th November patient was dismissed well, and able to resume his usual employment.—*Journal de Thérapeutique*. 25th November, 1879.—J. W. A.

Scirrhus of the Testicle.—In an article in *Arch. Gén. de Méd.*, February and March, 1879, Dr. Nepveu gives the results of an inquiry into this subject. While Rindfleisch denies the existence of this form of scirrhus, Nepveu has gathered together nine cases, three of which were under his own care, and in all of which a careful microscopic examination left no doubt as to the diagnosis. The lesion appears at about the forty-second year, and its onset is obscure, being denoted only by some vague and transient pains, or by changes in the consistence and the volume of the gland. The affected testicle preserves its ovoid form, and its volume is by no means considerable, from which the name of atrophic cancer has been given to scirrhus. Its consistence is very firm, its surface sometimes irregular. Functional derangements are little marked: its progress is very slow. The general health is little affected until the cancer becomes generalised, and death is the natural termination.

A section of the whole tumour presents two parts—the one ovoid (the testicle), the other placed above it (the epididymis, &c., invaded by the tumour.) The tissue of the testicle, very dense, is formed of enormous conjunctive trabeculæ, hard and resistant, enclosing in their meshes, which are rarely fine, some epithelial cells, of which the variety of form is strongly marked.

A scirrhus of the testicle may last for six or eight years. Surgical intervention is the only resource, but the results, up to the present time, have not been fortunate.—*La France Médicale.* No. 88. 1879.—G. S. M.

Influence of the Age of the Mother upon the Sex of the Child.—Bidder gives in the *Zeitschrift für Geburtshülfe und Gynækologie*, a series of statistical tables to prove the influence which the age of the mother exerts upon the sex of the child. The results obtained by the author are wholly opposed to the law of Hofacker Sadler, a law which makes the sex of the child depend upon the difference between the age of the father and that of the mother. Bidder does not admit that where the ages of the father and mother are nearly equal they will have nearly an equal number of boys and girls, nor that if the man is the elder there will be an excess of boys, and if the woman an excess of girls. This pretended law contradicts the observations of Nasse, Morel, Mortegonte, Moreau, and Ahlfeld. It deserves to be set aside, and it is only necessary, according to Bidder, to take into account the age of the mother. Very young females have generally boys; in the prime of life they give birth to a proportionately greater number of girls; and when approaching the change of life the number of boys is again proportionately in excess. Bidder's statistics cover 11,871 confinements. These give 6,274 boys and 5,597 girls. When the mother was under 18 years the proportion was 134 boys to 100 girls; from 18 to 30 years, 109 boys to 100 girls; from 30 to 40, 117 boys to 100 girls, and above 40 years, 130 boys to 100 girls. *Lyon Médical.* 5th October, 1879.—J. M.

On the Integrity of the Clavicular portion of the Trapezius in Infantile Paralysis of the Upper Limb.—This integrity of the upper portion of the trapezius seems to be the rule in most cases of malformation and of congenital dislocation of the upper limb. It has been observed also by Dr. Kirmisson in cases of dislocation occurring after birth, as a sequel to infantile paralysis. Hence, he infers that the explanation of the congenital lesions is to be found in a paralysis occurring during intra-uterine life. The integrity of the clavicular portion of the muscle alone is due to the fact that that portion receives some fibres from the spinal accessory nerve, while the rest of the muscle is supplied solely by the cervical plexus. This point may be of diagnostic value in doubtful cases.—*La France Médicale.* No. 85.—G. S. M.

On the Perception of Retinal Red by Patients themselves.—Dr. Galezowski has recently examined a number of patients on whom he had operated for cataract, and he has found that a large proportion saw a shadow of a red colour; others observed a red spot. Sometimes the colour was described by them as bright red, at other times rose red. This phenomenon often lasts for months, and has been observed in cases in which atropine has never been used, so that belladonna poisoning as a cause is eliminated. Dr. G. thinks the lens absorbs the red, and, on being removed, the appearance above described is observed by the patient.—*Gaz. Médicale de Paris.* 12th July, 1879.—J. C. R.

Books, Pamphlets, &c., Received.

On Loss of Weight, Blood Spitting, and Lung Disease. By Horace Dobell, M.D., &c. Second edition. London: J. & A. Churchill. 1880.

Pay Hospitals and Paying Wards throughout the World. Facts in Support of a Re-arrangement of the English System of Medical Relief. By H. C. Burdett. London: J. & A. Churchill. 1879.

Photographic Illustrations of Skin Diseases. By Geo. Henry Fox, A.M., M.D., New York. Forty-eight coloured plates taken from life. New York: E. B. Treat. Parts 1, 2, 3, 4.

The Medical and Surgical History of the War of the Rebellion. Part II, Vol. I. Medical History, being the second medical volume prepared under the direction of Joseph K. Barnes, Surgeon General. By Joseph Janvier Woodward, Surgeon, United States Army. Second issue. Washington Government Printing Office. 1879.

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ORIGINAL ARTICLES.

THE CAVITY OF THE CERVIX UTERI IN THE LAST MONTHS OF PREGNANCY.

By WILLIAM LEISHMAN, M.D.,
Regius Professor of Midwifery in the University of Glasgow.

(*With Two Woodcuts.*)

The share which the cavity of the cervix takes in the general development of the womb during pregnancy, and the relation which it then bears to the cavity proper of the organ, are points which have given rise to considerable discussion, and upon which writers seem even now scarcely to be agreed. The original idea, indeed, of Roederer, and, in modern times, of Désormeaux—that, up till the end of the fifth month, development took place at the expense exclusively of the cavity of the body of the uterus, and that from this time onwards the cavity of the cervix was invaded from above downwards until, at the term of pregnancy, the os externum reached its extreme of tension—has long been discarded as applicable to all cases.

Rigby* seems to have been among the first English practitioners who recognised the impossibility of reconciling the facts which are observed in a pluriparous case with the above theory; and, since his time, although many contradictory opinions have been advanced, the general conclusion seems to have been that the description of Désormeaux was in the main correct as regards primiparæ, but that in the case of pluriparæ the invasion of the cavity of the cervix did not take place till a later date. Schultze,* whose view may be taken as representing the ideas now commonly entertained upon the subject, holds that the invasion of the cervix in a primipara commences with the twenty-fifth week, and extends steadily from the os internum to the os externum. He maintains further that, in pluriparæ, the encroachment does not take place so early, but that the cervix may be found unaltered in length up to the thirty-first week; and that, in consequence of the permanent thickening of the lips in women who have borne several children, the cavity of the cervix does not, until labour has somewhat advanced, disappear or become obliterated, as seems to be the case before labour in a first case. It is quite obvious that the anatomical conditions in a woman who has previously borne children are of a special character, and that these render the investigation of the subject in that class of cases comparatively easy.

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* *A System of Midwifery.* London. 1844.

It is quite different, however, as regards the development of the primiparous organ, so much so indeed, that, whatever the facts may be, it is obvious that their elucidation is surrounded by special difficulties. One of the more important of the earlier signs of pregnancy is the quasi-œdematous softening which gradually attacks the dense tissue of the os and cervix, and which, when complete, so completely alters matters, in so far as the sense of touch is concerned, that it is often a matter of the greatest difficulty to make out, even on the most careful examination, the anatomical relations of the parts. It is this, in fact, which renders the investigation of the subject in all primiparous cases so difficult, which has led, doubtless, to the misapprehension of Désormeaux, and which surrounds the matter even now with some degree of obscurity.

At no time have the views of Roederer and his followers obtained universal assent. Of this there is evidence in the writings of the earlier part of last century, but by far the most important work of that period, in refutation of the theory commonly entertained, was that of Weitbrecht,† which was communicated in the form of a Memoir to the Imperial Academy of Sciences of St. Petersburg, in which he founds his conclusion on actual dissections of the gravid uterus in advanced pregnancy. There is good reason to believe that this work had, in a great measure, escaped professional notice, so that when Stoltz published his thesis in 1826,‡ the views which he there expressed were supposed to be original, whereas he had clearly been anticipated by Weitbrecht, as Dr. Matthews Duncan has conclusively shown.* These views, which have received general corroboration from Cazeaux, Farre, Playfair, and many modern writers and teachers, have been insisted upon with special force by Dr. Duncan, who, as early as 1853, wrote on this subject as follows :—"The cervix of the uterus is now known to differ so materially in its anatomy and physiology from its body, that it may, with propriety, be described as almost a separate organ. The researches of M. Stoltz have been confirmed by numerous authors, and seem to show that the cervix uteri does not become developed, so as to form part of the cavity of the organ in the way that it was formerly believed to do. More recent researches, by anatomists and obstetricians, too numerous to be mentioned, have shown the entire difference, anatomically and structurally, as well as functionally, of the mucous membrane of these two parts." Dr. Duncan's conclusion, in fact, is that there is no opening up of the cavity of the cervix from above, such as has been described by Désormeaux, Gooch, Montgomery, and a host of subsequent writers who have simply accepted the conclusions of their predecessors. No yielding takes place, he believes, at the os internum until the term of labour is close at hand, and it is then probably effected by the painless contractions which immediately precede labour; and he points out the important fact that the symptoms of an ordinary case of placenta prævia are strongly corroborative of his views, seeing that, if the cervix were dilated in the manner which has been so long assumed, alarming flooding during the later months would be inevitable, instead of being, as it is, a quite exceptional occurrence.

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* *Wandtafeln*. Leipzig. 1864.

† *De Utero Muliebri*. 1750.

‡ "Considérations sur quelques points relatifs a l'Art des Accouchements."

While freely admitting, however, the general accuracy of these modern views, it is difficult to avoid the conclusion that the subject is one which still requires attentive investigation. And for this purpose it is well not to lose sight of the distinction between primiparæ and pluriparæ, seeing, as has already been shown, that the conditions of investigation are in the two classes of cases so different. As regards the latter variety, it may be assumed that no important difference of opinion exists among modern authorities. But when we consider the case of primiparæ, and even admitting, as we may do, that the cavity of the cervix remains undiminished in size till near the end of pregnancy, how are we to account for the erroneous conclusions at which so many independent observers have honestly arrived, and how can we explain the *apparent* shortening or obliteration of the cervical cavity which is so manifest in cases of this class? When we find, for example, on an examination about the beginning of the eighth month, that the softening process has, in a first pregnancy, thoroughly obliterated all trace of shape or outline in the cervix, that we recognise the vault of the cranium as *apparently* separated from the finger by no thicker tissue close to the os than at a greater distance from it, the orifice remaining closed, we can have no difficulty in recognising the facts upon which erroneous opinions have been based; but it is only by passing the finger through the os externum, and finding that it has an inch or so to travel before the os internum is reached, that we are forced to admit the error, and can scarcely wonder at the opinions which have so long prevailed, and which are still, to a certain extent, maintained by some. There certainly are exceptional cases in which all trace of a cavity of the cervix disappears long before the beginning of labour; but to what extent such cases are to be admitted as exceptional, or whether they are merely looked upon as cases in which labour, having begun, has been arrested, are questions which merit attention, but upon which I do not propose at present to touch. The object of this short paper is rather to direct attention to such reasons as may be advanced to account for the apparent shortening, and the erroneous impression which is conveyed to the examining finger.

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* *Researches in Obstetrics.* 1868.

On this subject Stoltz advanced a sufficiently ingenious theory, which was adopted more or less by many of his followers, and which we find very clearly expressed by Cazeaux. The latter, be it observed, does not go so far as Matthews Duncan in asserting that the cervix cavity is only effaced by the painless contractions which precede labour, but that it disappears "in the last weeks of pregnancy," an expression which has an unfortunate vagueness about it. In the main he adopts the views of Stoltz with reference to the apparent obliteration of the cavity of the cervix, by a diminution of its length, and a marked increase in its width, coincident with the softening process to which we have referred. In the following extract his views are put with perfect clearness:—

> "Chez les primipares, j'ai souvent pu constater toute la verité des assertions de M. Stoltz. Chez ces femmes, la longueur du col diminue un peu dans les trois derniers mois, mais par un mécanisme tout autre que celui q'avait indiqué Désormeaux. Vers le septième mois, le ramollissement a envahi toute l'étendue de la portion sous-vaginale; les parois du

col, ayant perdu toute leur consistance, se laissent facilement écarter par les liquides sécrétés à leur face interne, et la partie supérieure de cette portion sous-vaginale s'évase, s'élargit de manière à donner à la totalité du col la forme d'un fuseau dont l'extrémité supérieure est fermé par l'orifice interne encore fermé, et l'extrémité inférieure constituée par l'orifice externe qui est jusqu' à la fin de la grossesse à peine entr' ouvert chez les primipares. Or il est facile de comprendre que cet évasement de la partie moyenne du col ne peut avoir lieu qu' autant que ses deux extrémités se rapprochent l'une de l'autre, ce qui diminue d'autant sa longueur totale. Je ne crois pas pourtant que ce rapprochement des deux orifices soit assez prononcé comme le pense M. Stoltz, pour qu'ils ne soient presque plus éloignés l'un de l'autre ; mais certainement il existe. Il y a donc chez les primipares un raccourcissement léger, mais réel, de la longueur du col ; cependant, comme on le voit, son mécanisme n'est pas du tout celui qu'avait indiqué la plupart des auteurs. Ce n'est pas par évasement de sa partie supérieure, et pour concourir à l'ampliation de la cavité du corps, mais par une espèce d'affaissement du col sur lui-même, affaissement qui, rapprochant les deux orifices, élargit en même temps, sa cavité centrale, et augmente ses dimensions transversales aux dépens de son diamètre vertical."*

What is here implied is represented in the accompanying diagram, and it will be conceded that, whether the theory be correct or not, it suffices in some measure to explain the facts, and merits at least the credit of ingenuity. But a mere approximation of the os internum to the os externum, to the extent implied in the above extract, will not account for the (apparent) utter obliteration of the cervix, and indeed the fact itself altogether lacks confirmation from those who have most recently given attention to the subject. It was in the course of some observations directed to this point that I first noticed in a primipara the condition of parts which I shall now describe,

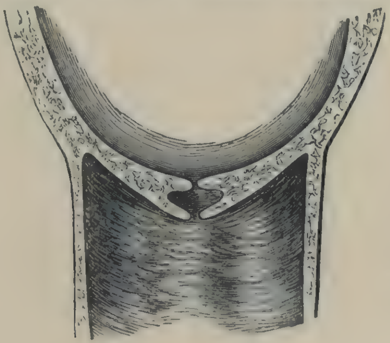

Fig. 1.

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* *Traité theorique et pratique de l'Art des Accouchements.* Paris. 1858.

and I have since then had occasion to make the same observation with sufficient frequency to warrant its being put on record. The difficulties of a mere digital examination are under such circumstances extreme, and it would doubtless be premature to admit anything at present without corroboration from *post-mortem* sources, but at the same time it seems to me that the observation accounts more satisfactorily for the facts which we encounter in practice than the theory which has been detailed and figured above.

If the finger be introduced, in a primipara at the seventh or eighth month, through the os externum, it immediately passes into the cavity which Cazeaux describes as fusiform in shape. If what he describes really took place, the os internum would be found directly opposite the external orifice through which the finger was passed. In point of fact, however, it is not so; for the os internum will most frequently be found decidedly nearer the symphysis pubis. The cavity seems by this to be distorted, so that its axis no longer coincides with that of the uterus itself, but is thrown more or less across it while the cavity is flattened from before backwards, as is here shown.

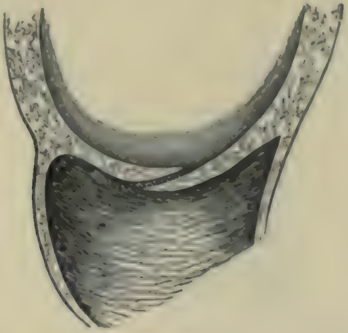

Fig. 2.

There being no yielding of the os internum, until a period much more advanced at least than was formerly believed, the cervix uteri becomes, in its softened state, distorted in its anatomical relations by the pressure which is exercised by the expanding womb, just as are the Fallopian tubes, ovaries, and other structures which have the most intimate anatomical relations with the organ. The feeling which the finger experiences in passing along the cavity is as if it were passing through a valvular opening, and the membranes are only attained when the finger has traversed a distance quite equal to the original length of the cavity of the cervix.

Be it observed, once again, that this explanation is only advanced with reference to primiparous cases, in which mainly, if not exclusively, difficulties may be supposed to arise. An apparent thorough obliteration of the cervix never takes place in a woman who has previously borne children, so that the investigation is in these cases comparatively easy.

PRACTICAL PAPERS ON THE MATERIALS OF THE ANTISEPTIC METHOD OF TREATMENT.

By GEORGE BEATSON, B.A. (Cantab.), M.D. (Edinb.)

III. ON THE ANTISEPTIC GAUZE.

(*With two Woodcuts.*)

In the present paper I propose to speak of the material which has been introduced by Mr. Lister for application to wounds, so as to serve as an external dressing which will act the part of the healthy skin, and, by preventing the access of putrefactive agencies from without, will allow of healing going on safely and expeditiously. This external dressing is in reality a compound one, inasmuch as it is made up of several materials, each of which has its own particular duty to fulfil, but I will commence with the consideration of the substance which is of the most importance, because it is its action which creates in the vicinity of the wound a germless atmosphere, and disinfects all discharges coming from it. I refer to the Antiseptic Gauze.

The Antiseptic Gauze.—The first mention that I find in the journals of the use of this material is in the *British Medical Journal* for January 14, 1871, where it is stated that it was employed in conjunction with the spray in the treatment of a very interesting case of incision into the elbow-joint to remove the head of the radius which was dislocated forwards. Accordingly, we must regard that year as marking the period in Lister's Antiseptic treatment of wounds when the spray and gauze were substituted for syringes and lac plaster. In appearance, however, the gauze carries us back still further, for who that has seen in any of our museums the mummified forms of ancient days, but is struck with the resemblance between the gauze of the present time and the linen bandages, stiffened with gum and rendered yellow by age, which encircle and swathe these relics of the past. And, indeed, when we read in Herodotus the description of the most expensive of the methods of embalming the dead, we find that the final process (after the body had lain its seventy days in natron) consisted in washing the corpse and wrapping the whole body in bandages of flaxen cloth. These bandages were invariably of linen, but of different qualities, from the coarseness of canvas to the fine texture of muslin. They were also of various widths and length, and in some cases they were dipped in liquid aromatics before being applied. We have, then, in this fact an early instance of a material being impregnated with substances so as to act as a preservative. But in addition to this very ancient custom, I was interested recently to find that our present use of gauze as a surgical dressing is not the first occasion on which this material has done duty in the controversy as to the origin of life and the causes of putrefaction. The question of spontaneous generation has not come to the front only recently. For years and years it has been the arena in which the ablest minds of the day have contended, just as they are doing now. In the earliest times the prevalent belief was that facts pointed conclusively to the doctrine that grubs, maggots, and the lower forms of life were evolved out of dead matter; that the sun, as Hamlet says, could breed maggots in a dead dog, or, following Lord Bacon, that substances, as flesh and cheese, could be converted by putrefaction into animalculæ. In the year 1638, however, we find that these views received a severe check owing to a series of experiments instituted by Francesco Redi, a Florentine physician, with the view of showing that there was a better explanation of the appearance of maggots in meat than the view commonly held. Directing his attention chiefly to this one question of the generation of maggots, I find that his course of procedure was to cover the meat with *gauze*, which did not of course prevent the process of meat-corruption, but it arrested the development of maggots, thus showing that it kept back something from the meat which formerly had access to it. It was soon discovered that this "something" consisted of the eggs of the common blow-fly, which gave rise, by a process of ordinary development, first to maggots, and finally to the mature flies. In other words, when the meat was covered over with *gauze*, flies could only deposit their eggs *upon* the gauze and not on the meat. I have alluded to this fact as being of some interest, especially as it shows that simple as was the method of experimenting adopted by Redi, it does not essentially differ from the cotton-wool and other plans followed by the scientific men of recent times.

Although the material introduced by Mr. Lister to form an external dressing is called *gauze*, it should not be so named. The word *gauze*, which derives its name from having been originally made at Gaza, in Palestine, is applied of course to any light transparent fabrics, of whatever fibres, woven in an open manner, with very fine yarn. The texture, however, of gauze is different from that of plain weaving, in which the warp or longitudinal threads are always *parallel* to each other. The essential character of gauze weaving is, that between each cast of the shuttle a crossing of the warp threads shall ensue, so that they are twisted in pairs from left to right and from right to left alternately after each shot of weft, thereby keeping the weft threads at equal distances apart and retaining them in their parallel positions. It is the intervals left between the interlacings which cause that degree of transparency which, without such an arrangement, could only result from a looseness of texture incompatible with beauty and utility.

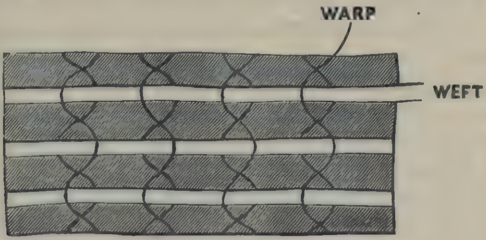

FIG. 1.

Figure 1 will make clearer my description. In it are seen the warp threads crossing and recrossing from right to left and *vice versâ*, while those of the weft are by this means kept in, at equal distances apart and parallel to one another. The fine cotton fabric known as Leno, and of which curtains are made, is a *gauze*, for it is woven in the above manner, as can be seen by examining a bit of it. But, if we look at a piece of what is termed "antiseptic gauze," we will at once see that all the threads are parallel to one another, as in plain weaving, and that there is no crossing of the warp threads; so that we are really dealing with a muslin or fine cotton cloth. And this is the case. The material is known in the trade by the term of "book muslin," which is the most open and transparent of the different muslins, and it is so called because the pieces of it, when they are folded up several times upon themselves, as they usually are, are not unlike books with their uncut leaves. This "book muslin" is made in two forms, the bleached and the unbleached. The latter is the kind usually adopted, as it is cheaper and softer, being free from any of the alum or sizing used in the case of the former variety. Messrs. Lang & Co., of Glasgow, and Messrs. Evans & Co., of Manchester, manufacture it, and at present it costs about 1d. per yard, though the price varies with the market. It is usually sold in webs of 80 or 100 yards long and 36 inches wide. The term *gauze*, therefore, is not exactly applicable to this material; yet, as it has become so fixed, and has received Mr. Lister's sanction, it would be difficult now to alter it, and no harm is done by retaining it.

Having thus briefly alluded to the fabric employed as the basis of the external dressing in use in Lister's system, and having pointed out its real nature, the next matters to consider are the substances used to impregnate it so as to render it antiseptic, the proportions in which these different substances are used, and the method adopted for incorporating them with the muslin.

1. *The substances used to impregnate the muslin and render it antiseptic.*—They are three in number, (*a*) carbolic acid, (*b*) resin, (*c*) paraffin, and each one of them is added with a definite object. I will speak of them in the order named.

(*a.*) *Carbolic Acid.*—This substance has been so fully spoken of in my paper to the *Journal* for January of this year, that it need not detain us now, beyond saying that the property which makes it so suitable as an ingredient in the external dressing is its volatility, whereby there is created, in the meshes of the muslin and in the vicinity of the wound, an antiseptic and germless atmosphere, so that all discharges are prevented from putrefying. As regards the variety of the acid used in the manufacture of the gauze, the No. 3. acid is the kind almost universally employed, and it has heretofore answered admirably. Of course the absolute phenol could be used, and I believe some small quantities of gauze so impregnated have been made, and phenol gauze could be obtained by ordering it from large manufacturers, as Messrs. Macfarlan & Co., of Edinburgh, but it would require to be specially made, and its cost would be considerably greater than that of the ordinary gauze, while, as I showed, its antiseptic virtues would be in no way increased.

(*b.*) *Resin.*--To understand the part that this substance plays in the gauze, we must bear in mind what are its chief properties and its mode of preparation. The ordinary resin or rosin of the shops is the type of a large class of substances which exist chiefly in the vegetable kingdom, and which are generally obtained by incising the bark of trees, when they exude in the form of oleo-resins, which are mixtures of an oil and a resin, and which gradually harden. Thus, it is well known that from the common Scotch fir, *pinus sylvestris*, a resinous juice exudes, which hardens into tears. If these juices are subjected to distillation, the volatile oil comes over, and the resin is left behind. This is the mode of obtaining ordinary resin. Common turpentine, obtained chiefly from the Scotch fir, is distilled, and after the oil of turpentine has passed over, the residue of the distillation consists of ordinary resin. It is run, while liquid, into metallic receivers, coated with whiting to prevent adhesion, and from these it is ladled into wooden casks or moulds. According to the amount of heat applied in the distillation is the variety of the resin; but, before speaking of these varieties, I may say that if the distillation be not carried too far, the product obtained contains a little water, and is the officinal resin which enters into our pharmaceutical preparations, and is employed in the different plasters and ointments on account of its great adhesive and slightly stimulating powers. In appearance, it is a yellowish, brittle, and pulverisable substance, of a faintly terebinthinate odour and taste, somewhat opaque from the water with which it is incorporated, but easily fusible, and burning with a dense yellow flame and much smoke. Another name for this officinal resin is *colophony*, this term being given to a resin obtained from the pines on Mount Gallesus, near Colophon, in Asia Minor. This fact is seen in the French word for resin, which is "Colophane." As the colour of resin depends greatly on the amount of heat used in its manufacture, we have several varieties. Thus, there is the *black resin*, which is the cooled brittle mass in the state in which it leaves the still; then there is the *yellow, or pharmaceutical resin*, which is the black modified by the action of water; and lastly, there is the *white resin*, which is rendered translucent by being deprived by evaporation of any water it may contain. In fact, the above are only the leading and distinctive varieties of resin, for they are so numerous, that they are known in the trade under different brands—A, B, C, &c., each brand including different kinds. Since the abolition of the duty, the American resin has found its way into the market, and it is very much purer than the English, and fetches a better price. A very suitable resin for use in preparing the muslin is the F brand, although Mr. Lister, I believe, recommends the *virgin resin*, which is more expensive, costing about 3d. per lb., and is so called because it is the earliest which escapes from the trees, and contains the fewest impurities. The qualities which recommend this substance for use in the gauze are its insolubility in water (and consequently in the discharges from a wound), its non-volatility, and the tenacity with which it retains the carbolic acid, giving it off very slowly, not only at the ordinary temperature of the air, but even at that of the body. So great is this tenacity, that in a melted mixture of one part of carbolic acid, with 5 parts of resin, the taste of the acid can hardly be perceived, demonstrating how strongly the resin holds the acid. As a consequence of this, the antiseptic is stored up in considerable amount, and for a lengthy period, owing to the slowness with which it is given off. Further, the insolubility of the resin is an element which comes into play most advantageously, for the liquid discharges soaking into the porous fabric of the muslin do not wash away the substance which holds the antiseptic on which the dressing depends for its efficacy in keeping out the external septic ferments, which are always ready to find access to a wound, and set up the putrefactive processes.

(*c*.) *Paraffin.*—This is the other ingredient of the mixture used for charging the muslin, and, as in the case of the resin, it will be advisable to say something about its properties, and the reason for its introduction. Paraffin is familiar to all of us, in the form of a beautiful white, crystalline substance, which is often made into candles. It was first found by Reichenbach, in the year 1830, who isolated it from the tar of beechwood, and from its chemical inertness (for it was found to resist the action of acids, alkalies, and other substances, and not even to unite by fusion with other bodies), he named it paraffin (Lat. *parum*, little, *affinis*, affinity). It remained more or less a chemical curiosity until about the year 1847, when Mr. James Young obtained it as a by-product in the distillation of an oily exudation occurring in a Derbyshire coal mine. Prosecuting his inquiries still further, Mr. Young found that, by the dry distillation of bituminous coal, he got an oily liquid from which paraffin could be obtained. Accordingly, about 1850, he established a manufactory for it at Bathgate, near which the Boghead coal is found; and this was followed later on by similar works at West Calder; and at each of these places new towns have really developed. The extent to which the industry has spread may be realised by the fact that the works at Bathgate cover an area of 25 acres, while those near West Calder are no less than 70 acres in extent. The processes by which the paraffin is obtained are as follows:—The shaly coal is crushed by powerful machines, and thrown into long iron retorts. It is there kept at a dull red heat, the cinders or waste being removed from the lower end of the retorts. By the heat the coal is decomposed, and the oily vapour escapes from the retorts into main pipes, whence it makes its way into condensers, and there becomes a black, greasy, oily liquid, which flows into large reservoirs. Subsequent processes convert this oily fluid into an oil for burning, an oil for lubricating machinery, a liquid naphtha, and the solid white paraffin, these changes being brought about by a series of refinings and agitations with sulphuric acid and caustic soda, by distillations at various temperatures, and also by the action of hydraulic presses. The solid matter left in these pressure bags is of a dirty yellow colour, and is then subjected to various processes, so as to get it beautifully white. Thus it is dissolved in naphtha, cooled and settled, filtered, steamed, melted, and poured into moulds. In this way it is obtained transparent and pure. I have gone somewhat into detail in reference to the preparation of this substance; for, in a recent lecture in the *Lancet*, 20th December, 1879, Mr. Lister has pointed out that it is necessary to have the paraffin pure. Thus, he says:—"I regret to find that a crude form of paraffin is sometimes employed in the manufacture of the gauze. It has the great disadvantage that it acts on the caoutchouc of the mackintosh cloth used in conjunction with the gauze, and soon makes it soft and useless. When pure paraffin is used, the mackintosh will last for weeks together, and is thus, in the long run, very cheap, as well as perfectly trustworthy." This, then, is a point of some importance in the manufacture of the antiseptic muslin, and only perfectly clear transparent paraffin should be used. If it has an opaque and semi-transparent look, it is not suitable for use, as it has not undergone the filtration through charcoal that it ought to have, so as to rid it of impurities. Of course, this purifying process is expensive, and adds to the cost of the material, which is about 9d. per lb.; but there is another point connected with the purity of this substance which should be borne in mind, and that is, that, with some reservations, the purer the paraffin, the higher its melting point; and, while some of the less pure varieties will melt about 110°, this very pure form does not do so until it reaches a heat of 145°. This circumstance has to be remembered in preparing the mixture for charging the muslin. But, while paraffin has little affinity for other bodies, are there none with which it will unite? Fortunately there are, and, of these, *resin* is one, so that the two may be made to amalgamate together. With what object, then, is it introduced in preparing the gauze? It is introduced to correct that property in resin which makes it so suitable for plasters and ointments—viz., its adhesiveness, but which, under present circumstances, becomes a drawback, for it renders the mixture too glutinous and adhesive. Placed thus intimately in connection with the resin, it might be thought that the paraffin would rob it of some of its carbolic acid, and perhaps part with it readily; but it has been found to have this peculiarity, that it does not blend at all with carbolic acid in the cold, so that its presence in no way interferes with the tenacity with which the resin holds the acid, but only serves to dilute the mixture of the acid and resin, and prevent the too great adhesiveness of the latter. For these reasons, paraffin is a most valuable agent, and this is at once seen when we bear in mind that, as far as we know at present, there is no other substance that behaves so under similar conditions. Thus, as Mr. Lister points out, if we were to make a mixture of 1 part of carbolic acid, 5 parts of resin, and 5 parts of spermaceti, it would be more pungent than one of 1 part acid and 5 parts resin alone, for the spermaceti, taking up the acid, would only hold it very feebly, and would readily part with it to surrounding objects. The objection, then, to such a mixture would not be on the ground of consistency, for it would mix admirably, but it would be more pungent and less stable than one composed of acid and resin alone. Accordingly, the presence of the paraffin in the mixture only renders it somewhat milder. "It seems needful," says Mr. Lister, "to point out this circumstance, because, from want of knowledge of it, modifications of the gauze have been suggested, in which the paraffin has been replaced by other materials, which cannot fail to be disadvantageous." (*Lancet*, 13th March, 1875.) In itself, paraffin is in no way an irritant, for it has been successfully used both alone and as an ointment for applying to chilblains, excoriations, and indolent ulcers.

2. *The proportions in which these different substances are used.*—There has of late been a change in their proportions, this change being announced in the *Lancet* for 20th December, 1879. Mr. Lister there says:—"We have improved upon the gauze of late. The proportions we used of the ingredients were originally 1 part of carbolic acid to 5 of common resin and 7 of paraffin, the paraffin being added to prevent un-

due adhesiveness. We have now changed these proportions to 1 of carbolic acid, 4 of resin, and 4 of paraffin. By that means we have, in the first place, a gauze dressing with half as much carbolic acid again in it. It turns out that this is not too irritating, and, therefore, that is a great improvement; for the gauze is, of course, more efficacious antiseptically in proportion as it has more carbolic acid in it. From the diminution of the paraffin we have a little more adhesiveness, but that, I think, is positively an advantage. We find it does not cause any serious inconvenience, and, on the other hand, it tends to prevent the disposition of dressings to slip upon the skin: it helps to keep them more securely in place. And then I may mention as a secondary, though not insignificant advantage, that though we thus increase so considerably the proportion of the carbolic acid, which is the most expensive ingredient, we have not added to the cost of the materials as a whole, because pure paraffin is so much more expensive than resin, that by diminishing the proportion of paraffin to the resin, we have cheapened the article more than we have enhanced its price by increasing the quantity of carbolic acid, so that the gauze is rendered slightly cheaper by this alteration of our proportions."

3. *The method employed for carbolising the muslin.*—Various modes of procedure have been and are in use. Thus, the gauze may be very readily prepared by dipping the cloth into a steam-heated trough containing the antiseptic mixture, and then passing it in several layers between a pair of rollers, to remove any excess of the fluid. This is a plan which has been found advantageous by some manufacturers. Prepared in this way the cloth is left with rather less than its own weight of the mixture, and while the individual fibres are all charged with the acid held by the insoluble resin, the interstices are quite open, and allow the material to absorb discharge. Another method is to dip the cloth as before in the heated and melted mixture, and then to squeeze out the superfluous material by a press, with heated metallic plates. Mr. Lister considers that this gives a less uniform result than the rollers. (*Holmes' System of Surgery*, vol. v, p. 624.) While, however, these plans are very suitable for manufacturers who make large quantities of the antiseptic gauze, they are quite inapplicable if we require to prepare smaller quantities of it, as in the case of a charitable institution using only a moderate amount in the year. With the view of meeting this difficulty, Mr. Lister has detailed a third way of preparing the gauze, which produces an excellent quality,

is easily carried out, and does not involve any expensive apparatus. It is in use in the Royal and Western Infirmaries of Glasgow, and also in the New Royal Infirmary of Edinburgh; and the gauze so prepared is pronounced very good and trustworthy. I cannot do better than quote Mr. Lister's own description of this method of preparation, as given in the *Lancet* for 13th March, 1875—"In order to charge the gauze, the paraffin and resin are first melted together in a water-bath, after which the acid is added, and blended by stirring. The object now is to diffuse this melted mixture equally through the cotton cloth, and for this purpose two things are requisite—viz., that the cotton be at a higher temperature than the melting point of the mixture, and that it be subjected to moderate pressure after receiving it. The cotton cloth, a yard wide, is cut into six-yard lengths, and these having been folded so as to be half-a-yard square, are placed in a dry hot chamber, formed of two tin boxes placed one within the other, with an interval to receive water, which is kept boiling by fire or gas beneath, the upper edges of the boxes being connected and provided with an exit pipe for the steam. There is also a glass tube arranged as a gauge of the amount of the water, and the chamber has a properly fitting lid. The bottom of the chamber is strengthened with an iron plate, to enable it to bear the weight used for compressing the gauze when charged. There is a piece of wood, about 2 inches thick, nearly fitting the chamber, covered with sheet lead, so as to make it about as heavy as a man can lift by means of two handles in the upper surface. The weight is heated along with the cotton, and is put first into the chamber so as to leave the cotton loose for the penetration of the heat, which occupies two or three hours. The cotton, when heated, is taken out of the chamber along with the weight, and placed in a wooden box to protect it from the cold. (It would be better to have a second hot chamber for this purpose, since in cold weather the cotton is apt to be too much cooled in spite of the protection of the wooden box.) The heated gauze is then at once charged with the melted mixture of carbolic acid, resin, and paraffin, in quantity equal to the weight of the cotton fabric (or slightly less), and, in order to diffuse the liquid as equably as possible, it is sprinkled over the gauze by means of a syringe, with a number of minute perforations in its extremity, the body of the syringe and the piston-rod having each a wooden handle to protect the hands of the workman from the heat. The syringe is constructed to hold half the quantity of the mixture required for charging one piece of cloth. One folded piece being placed at the bottom of the hot chamber, its upper half is raised and turned aside, and one syringeful is sprinkled over the lower half. The upper half is then put back into position and another syringeful thrown on. The same process is repeated with all the other pieces of gauze, after which the weight is put into the chamber to compress the charged cotton, and the lid applied. An hour or two are then allowed to elapse to permit the complete diffusion of the liquid, when the material is fit for use. The apparatus above described can be made by a common tinman for about £10."

Such is the plan that Mr. Lister advocates for the ordinary preparation of the gauze, and I have thought that it might make the subject clearer were I to give a drawing of the

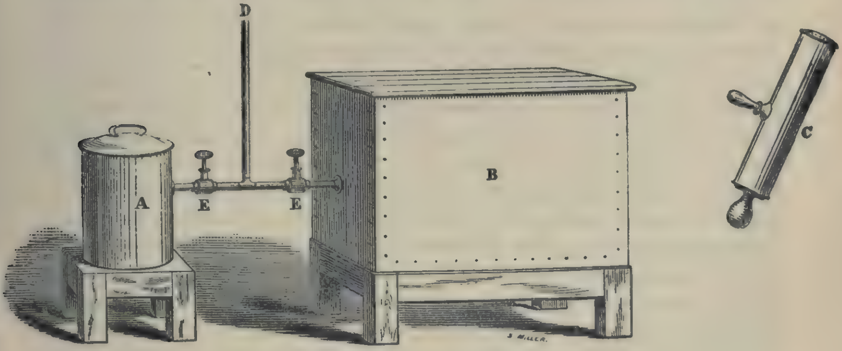

Fig. 2.

apparatus at present in use in the Royal and Western Infirmaries of this town, and which has been constructed in accordance with the above description, the only essential difference being that it is heated by steam instead of by water and gas. As a consequence of this modification, there is no need for any glass gauge externally, but there is required an escape pipe below the apparatus for the condensed steam. Further, the vessel for holding the mixture of acid, resin, and paraffin, is made of two vessels, one inside the other, with an interval between them for the steam, just as in the chamber for the gauze itself. Lastly, the syringe is made large enough to hold sufficient of the mixture to saturate one piece of gauze, half a syringeful doing for the lower half of the piece, and the remainder for the upper half. I have reason to believe that the apparatus so modified could be constructed at a cost of £6, including the steam connection.

In the accompanying drawing, Figure 2, A is the receptacle for the antiseptic mixture of carbolic acid, resin, and paraffin; B is the tin case in which the muslin is heated, impregnated with the mixture, and submitted to pressure; C is the syringe used for the sprinkling of the muslin with the mixture; D is the pipe which conveys the steam for heating the apparatus; while E and E are stopcocks for turning on or shutting off the steam in connection with either A or B. The flat weight alluded to in Mr. Lister's description is not shown in the drawing, as it fits into the interior of the box B.

I will now give a short outline of the method of preparing the gauze adopted in the Royal and Western Infirmaries of Glasgow, and I may say here that the ingredients used in the impregnating mixture, as I may term it, are the varieties mentioned in the early part of my paper—viz., No. 3 carbolic acid, virgin resin, and pure paraffin of a high melting point. An order having been received for preparing say, 500 yards of gauze, the first thing done is to measure off and cut into six-yard pieces five of the webs of unprepared muslin, which usually contain 100 yards each, though sometimes only 80 yards. The steam having been turned on to the chamber B, the six-yard pieces, folded half-a-yard square, are now placed in it, no pressure being now exercised on them so as to allow the heat to permeate among the different layers. While this heating of the cotton is going on, the resin and paraffin are being melted in the vessel A, by means of steam. This is usually accomplished in about two and a half hours, but the mixture requires stirring at intervals, as the resin being the heavier of the two substances, would sink to the bottom of the vessel. This same period of two and a half hours is found sufficient for heating the muslin, which is then removed to a wooden box to keep it warm, and the proper quantity of carbolic acid being added to the mixture in the vessel A, the process of charging the muslin by means of the syringe goes on piece by piece. I may add that the carbolic acid, on account of its volatility, should not be added to the impregnating mixture until a short time before the actual work of charging the muslin commences. The syringe is constructed to hold enough of the mixture to charge one piece of cloth, accordingly one folded piece of muslin is placed at the bottom of the hot chamber B, and its upper half being raised and turned aside, one half of the syringeful is sprinkled over the lower half of the piece. The upper half of the muslin is then put back into its place and the remainder of the syringeful thrown over it. The process is repeated with all the other pieces of muslin, when the weight is put into the chamber B to compress the charged cotton, and the lid applied. About two hours are allowed to elapse, so as to permit of the complete diffusion of the liquid through the muslin, when the material is fit for use. It is then taken out of the chamber, each piece is unfolded and stretched, and being refolded is ready for use. The stretching process improves the gauze, for if put away just as it is taken out of the chamber it is somewhat damp, the different layers have a tendency to adhere together which gives the gauze a firm and hard feeling. This is prevented by this simple expedient. As prolonged exposure to the atmosphere renders the gauze somewhat hard and crisp, and deprives it of its soft and slightly moist feel, it should be kept closely packed, and as little exposed to the air as possible, consequently a tin box, with a well fitting lid, is one of the best ways of keeping it so as to prevent it altering its properties. It is also advisable to keep the supply placed in the wards for daily use in tin boxes, for the same reason. This also prevents dust falling on it.

Muslin prepared in the manner just described will be found to have all its individual fibres charged with the mixture, while the interstices are left open and free for any discharges to make their way through them. As to the quantity of the mixture taken up by the muslin, that varies to some extent with the thickness of the material. If it is a very thin cloth, it will take up less than one of a thicker variety, and there are considerable differences in the thickness of the muslins manufactured. Speaking generally, the muslin when charged has less than its own weight of the mixture, in fact some manufacturers put it at about three-fourths of its own weight. The antiseptic gauze, however, is by no means a heavy substance, one yard of it weighing only about one ounce. I do not propose at present to say anything about the manner of using it. That will come in a future paper, but I may say that it has only to be employed as a dressing to recommend itself as a most cleanly and trustworthy material, provided it is prepared as specified above. And it is necessary to be on one's guard. Not long since there was offered to the profession an article which emanated from Manchester and was termed *carbolised gauze*, and so I suppose it was for a short period in its existence, but as neither resin nor paraffin was used in its preparation, the carbolic acid vapour that had been passed through it soon left it and it was practically worthless as an external dressing to keep out septic agencies. There are several other varieties of gauze known in the surgical world, such as *Bruns*', made with resin, castor oil, carbolic acid, and alcohol, *Eilau's*, made with linseed oil, yellow wax, resin, oil of turpentine, and carbolic acid, and *Pohl's*, made with carbolic acid and alcohol, but as pointed out in an earlier part of this paper they all labour under the drawback of having other ingredients introduced to take the place of the paraffin, which really are not suitable to act for it, and they cannot fail to be disadvantageous. In Scotland, Messrs. Macfarlan & Co., 17 South Bridge, Edinburgh, are the largest makers of antiseptic gauze; while, in England, it is manufactured on a considerable scale by Mr. John Milne, Eagle House, Ladywell, Kent. Gauze obtained from either of these makers may be relied on as excellent in every way and quite trustworthy. I may here say that Messrs. Macfarlan & Co. manufacture two kinds of gauze—one the ordinary brown variety and another of a white colour. This last is made in exactly the same way as the other, only the basis of it is the bleached muslin, and all the ingredients used in making it are of the finest description, the resin especially being the white variety. As a consequence of this it is whiter to the eye and much more expensive than the brown kind. The object Messrs. Macfarlan had in making it was to supply a better quality of gauze for private practice, but they tell me that they only make very small quantities of it now, as the brown variety is found to be quite as suitable and as much liked in private as in hospital work. Occasionally, it is noticed that in places the gauze has a darker and browner colour than elsewhere. This deepening of the colour is due to its having been accidentally exposed to greater heat at that particular part, as, for instance, if it was in actual contact with the sides of the hot chamber; as a consequence of this the fibres of the muslin have got a little charred, and there is less carbolic acid at these places. Sometimes this happens to a whole piece of gauze, as, when it is the lowest of the pieces and touching the floor of the chamber. This condition can easily be distinguished from that in which the deeper colour is due to an excess of the antiseptic mixture, for in this latter state of matters the insterstices of the muslin will be seen to be filled up also. As regards the price of the antiseptic gauze, Mr. Lister has reckoned that the cost per yard of the materials for charging it is about *one farthing*, so that the only other items to be considered are the cotton cloth and the time of the man preparing it. In 1875, when Mr Lister's calculation was made, the muslin was 1½d. per yard, so that any institution having its own apparatus could calculate on producing the gauze at a cost of somewhat less than 2d. per square yard. Since then the cotton cloth has been much cheaper, and I understand that at present the antiseptic gauze as prepared in the new Royal

Infirmary, Edinburgh, by means of an apparatus similar to the one described above, costs the establishment a little under 1½d. per yard. Of course it cannot be obtained by the profession at such a low rate, but either Macfarlan's or Milne's gauze can be bought from the Apothecaries Co. here, in boxes of six yards at 3d. per yard, and if large quantities, such as 1,000 yards, are taken, at 2½d. per yard, nett. The white gauze of which I spoke costs 5d. per yard for six yards, and 4½d. per yard in quantities of 1,000 yards.

Seeing that the cotton cloth is the heaviest item of expense in the antiseptic gauze, Mr. Lister, in the *Lancet* for 13th March, 1875, proposes that this item may be avoided to a great extent in hospital work by having the dressings washed and recharged with the antiseptic mixture over and over again. In this way he considers that there will be a considerable saving of expense, and he states "that the cotton cloth is then even better adapted for the purpose than it originally was, having lost the slight rigidity caused by the starch or gum used to stiffen the threads before weaving." If such a course is followed there are two conditions, which even Mr. Lister himself admits are essential to make this procedure successful, the first is that the dressings must be *large* ones, so as to repay the trouble of washing and arranging in proper masses for recharging; and the second is, that care must be taken to cleanse the dressings of the substances with which they were originally charged, and of the discharges with which they have been soaked, by pressing them well in the hot water with a suitable wooden implement. I confess that when the matter is looked at from all sides, I am doubtful as to the saving of expense, for there is such difficulty in washing the dressings free from the resin, and the process occupies such a time that I believe new fabric could be purchased for about the cost of the labour expended in cleansing that which has been once used. I am not sure, too, whether there are not other circumstances which forbid this kind of economy being practised. Not only is it a difficult matter to free the old dressings from the resin and other substances, but the discharges that have soaked into them have also to be got rid of. Now, if we knew that every case in which antiseptic dressings were employed was *aseptic*, then I consider there would be no risk, but we cannot know this. In hospital work many putrid cases have gauze dressings applied to them; and in this fact lies an objectionable element, which not even the re-charging with the antiseptic mixture can entirely remove. On these grounds I think a preferable plan is to have the dressings washed and made into bandages, in which capacity they are not likely to be such a source of danger as when forming the material of the external dressing itself. I may add also that the usual cost of recharging dressings is 1d. per yard, which, added to the outlay for washing, does not leave much room for saving. Lastly, I would just mention that in *Holmes' System of Surgery*, vol. v, second edition, p. 624, Mr. Lister gives us the interesting information that the idea of the antiseptic gauze was suggested to him by the principles on which oakum proves such a suitable surgical dressing—viz., its porousness, which allows of the discharges being absorbed, while the creasote stored up in its fibres acts as an antiseptic, and disinfects all the fluids with which it comes in contact. Oakum, as is well known, was employed very much as a surgical dressing during the American War, and was found to answer exceedingly well.

To recapitulate, then, in conclusion, I would direct attention to the following points:—

(1.) The external dressing on which Mr. Lister relies for keeping out the sources of putrefaction from a wound is a material which he has termed "antiseptic gauze."

(2.) This *gauze* consists of cotton cloth of open texture, known in the trade by the term "book-muslin."

(3.) The substances used for rendering the gauze antiseptic are (*a*) carbolic acid; (*b*) resin; and (*c*) paraffin.

(4.) Each of these three substances has a distinct object to accomplish, the resin holding the acid with great tenacity, while the paraffin prevents too great adhesiveness.

(5.) At present the proportions in which these substances are combined for charging the gauze are one of acid, four of resin, and four of paraffin.

(6.) The plan recommended by Mr. Lister for the manufacture of the gauze is to sprinkle the muslin, by means of a syringe, with the above substances in a liquid state, and then to subject the material to considerable heat and pressure in a proper chamber.

(7.) Gauze prepared in this way has carbolic acid stored up in its individual fibres, while the interstices are freely open for discharges to make their way through, and thus the porousness of the material is in no way interfered with.

(8.) When the gauze is applied as an external dressing the temperature of the body volatilises the carbolic acid, which forms an antiseptic atmosphere in the vicinity of the wound and between the meshes of the gauze, thus depriving the air of its septic influences, and preventing putrefaction of any discharges.

(9.) The antiseptic gauze should be kept closely packed, and in tin boxes, to prevent its becoming crisp and hard from exposure to the air.

(10.) If it is determined to wash and re-charge the gauze, after it has been used, this should be done under special precautions.

(11.) It is an open question whether this procedure is a saving of expense, especially now that the original cost of the new material is so much lessened.

(12.) It was the use of oakum as a surgical dressing which suggested to Mr. Lister the more refined antiseptic gauze.

(*To be continued.*)

DEFECT OF THE CEREBELLUM OCCURRING IN A BROTHER AND SISTER.

BY DONALD FRASER, M.D.,
Medical Officer to Riccartsbar Asylum, Paisley.

(*With a Lithographic Plate.*)

AT a meeting of the Glasgow Pathological and Clinical Society, held 28th March, 1876, I presented two patients, a brother and sister, aged respectively 30 and 20 years, who were affected with what, at the time, I described as a peculiar form of nervous disease, though I expressed my belief that they were cases of cerebellar disease, the exact nature of which could not be determined, but was probably sclerosis.

The death from phthisis, of the elder of these patients, at the Home for Incurables, near Kirkintilloch, on the 11th June, 1879, presented an opportunity for ascertaining the nature of the disease. Permission having been obtained, a *post-mortem* examination was made by Dr. Joseph Coats, in the presence of Dr. Whitelaw, of Kirkintilloch, and myself, when the lesion was found to be defect of the cerebellum. As a description of these cases is of some clinical, if not physiological value, it will be necessary to describe them in detail. Their physiological importance may not be very great, when we remember that "the functions of the cerebellum form one of the most obscure and disputed questions in cerebral physiology (Ferrier's *Functions of the Brain*, p. 85). It is also somewhat humiliating to learn that "there is hardly a thesis in cerebral physiology, in respect of which a long array of 'cases' may not be quoted strikingly supporting the views enunciated, and a long array as flatly contradicting them" (Foster's *Physiology*, second edition, p. 498). The cases may, however, be important, when we bear in mind that, according to Nothnagel, atrophy of the cerebellum (to which these cases are related) is, of all pathological processes, the best fitted to throw light on the functions of the human cerebellum (Nothnagel "On Cerebellar Disease;" reported by Dr. Cobbold in *Lond. Med. Rec.*, 15th November, 1878).

These patients first came under my observation about the year 1869. At that time the brother, A. K., was employed, during a part of each day, delivering newspapers from door to door. He walked with the gait of a very drunken man, reeling very much, his body inclined forward, his head thrown back, his mouth open, and his eyes inclined upward, apparently in constant danger of falling on his face, though he fell but seldom, and was able to walk considerable distances. He gradually got worse, and, about 1876, he had to give up his occupation of newsboy; walking was much more difficult and fatiguing, while he fell very often. I have often seen him pitching forward almost at a run, and sometimes catching hold of a lamp post, to prevent himself falling, to which he would cling until he had gathered strength for a fresh start. In 1875 he had typhus fever, from which he recovered, without being apparently much the worse for it. Before his removal to the Home for Incurables, which was in April, 1878, he was able to walk but short distances, and used to spend hours at a time leaning against the edge of the doorway of the house in which he lived, his hands in his pockets, his body stooping forward, and swaying slightly from side to side, his head thrown back, with constant nodding motion, as though it were much too heavy for his neck, so that he had difficulty in balancing it. I considered that his head was thrown back to counterbalance the forward tendency of his body. His eyes moved unsteadily, though there was no true nystagmus, and, as already said, they were generally turned upward, and to one side. His right eye was affected with internal strabismus, which, like the other symptoms, came on gradually. His hearing was good, his sight fair, and tactile sensation normal. I could not ascertain whether there was any undue sexual appetite; my opinion being that there was not, though there was evidence of some degree of spermatorrhœa.

Though he was very thin, his appetite and digestion were good, and his muscular system tolerably well developed; he could sustain considerable muscular effort with legs and arms; indeed, until within about a year of his death, his general health was fairly good. When he spoke, his articulation was slow, guttural, and hesitating. Though uneducated, there were no indications of mental unsoundness, unless a particular fondness for money—which, however, he could only gratify in a very small way—and some amount of obstinacy, be considered as such. When seated, there was no tremor or chorea-like movements, with the exception of the nodding movement of the head. When asked to pick up any object, such as a pencil, he did it in the manner, though not so exaggerated, of one affected with chorea. Having picked it up, he could hold it out at the full stretch of his arm, without any tremor or unsteadiness. On being asked to touch the point of his nose with his finger, he could do it when his eyes were open, hesitatingly, yet nearly as well as a healthy person. With his eyes shut, his finger moved about unsteadily before reaching the spot. With the exception of a slight swaying movement he could stand well, both with his eyes shut and open. In reference to the reeling which was so marked a peculiarity of his gait, his own opinion was that it was due to his "head being light."

His mother states that he was a healthy child, and that she did not observe anything about him different from other children, until about his second or third year, the disease having begun so gradually that she was at a loss to fix the date when it was first observed; about that time, however, her attention was called, sometimes by others, to a slight reel or stagger in his walk which she would not observe again for perhaps a whole day. About his sixth or seventh year this reeling became very decided, and more or less persistent. At this age he was sent to school, but was soon removed from it because of his infirmity.

In the case of the sister B. K., who is now 24 years of age, all the above symptoms are present, though less marked. She is well developed, menstruates regularly, and is in good general health. Her history as to the beginning and progress of the disease is but a repetition of the brother's as given above, though her mother describes her as having been a very fine child, and as having come under the influence of the disease more slowly than he did. She reads ordinarily well, and has managed to read a good deal of penny literature while engaged keeping her father's shop for the sale of newspapers and smallwares, though latterly reading has become more and more fatiguing. She cannot write from difficulty in making the necessary movements, and was sent home from school because of this difficulty. She states that in walking her feeling is that she will fall on her face, and her walking is now so bad that she is ashamed to go out, and has not done so for four years. Her eyes are not so unsteady as her brother's were, and the upward tendency is not so marked. Her pupils act normally, but appear somewhat sluggish. Her eyes can only be kept steadily on an object by an effort of the will, they constantly tend diagonally upward and to the left, and she states that it is a relief to let them go in that direction. During convergence of the eyes, as in looking at a near object, internal strabismus of the right eye takes place, the upward direction being retained. There is no colour blindness. Her speech is also slow, if not hesitating; but she has a fair command of language for one in her position. She is quite free from mental defect, is warm hearted, and well behaved, and there are no indications of either absence or excess of the sexual appetite. When she lies down, "puts her head on the level," as she terms it, she becomes giddy, and states that her eyes "glisten," and that she cannot see the clock which hangs within her view; while this continues she dare not turn her head or she would be much worse; and it is often or always associated with visceral sensations, such as a feeling of nausea, though she does not vomit.

In reference to the beginning of this affection in those patients, there is no record of any illness preceding it, no feverish attacks or fits, and they do not seem to have suffered specially from what are termed teething troubles. The father and mother are ordinarily healthy working people, who came through much hardship from poverty. The father has a good family history, and though now temperate, he was much given to drink before and after the birth of these children.

The mother is industrious and rather intelligent. Her father, mother, and grandparents were healthy. She has one sister weak-minded from birth; she has had nine children, five of whom, including the lad who is the subject of our remarks, are dead. One died a few days after birth. The second died æt. 15 months, from the sequelæ of measles, and had convulsions a few days before death; a third also died, æt. 15 months, of convulsions, after three days' illness. A fourth, æt. 32 years, died of phthisis. The living members of the family are all in fair health. One, a married woman, had repeated attacks of convulsions when about eight years old, and she had a child, whom I saw, suffering from cerebral meningitis.

An ophthalmoscopic examination was made by Dr. Thomas Reid, surgeon to the Glasgow Eye Infirmary, in the case of both these patients, on the occasion of my presenting them to the members of the Pathological and Clinical Society. His report is :—" The optic discs are pale and contracted, and somewhat irregular in their outlines. The paleness of the discs, especially in their upper aspect, was partly obscured by a slight and superficial congestion. The retinal veins are opaque and rather congested, the arteries rather contracted. The fundi pale and dingy coloured, indicating, I think, interstitial changes in the structure of the choroid, probably escape of pigment granules from the cells diffused through the substance of the choroid and giving it the opaque and dull aspect it has. The change in the choroid had probably some obscure connection with the meninges, especially the pia mater, with which it is in direct connection in the embryonic state, from which period the changes indicated above had their origin."

In connection with the changes in the choroid mentioned by Dr. Reid, I observe that Dr. Gowers, referring in his recent book on the Ophthalmoscope in Medicine* to pigmentary changes in the choroid, remarks, "They are also interesting to the physician as associated in some other cases with evidence of a family tendency to nervous disease."

The *post-mortem* examination was made at the Broomhill Home for Incurables by Dr. Joseph Coats, who reports as follows :—Summary of *post-mortem. Phthisis pulmonalis, pneumothorax, amyloid liver, spleen, kidneys, smallness of cerebellum.*

There was considerable emaciation of the body generally. The heart was normal. The left lung was firmly adherent throughout. In every region of this lung there were cavities with considerable condensation around them. The right pleural cavity was filled with air, and the lung was collapsed and considerably compressed. There were some pleural adhesions on this side. In this lung the disease was much less advanced than in the other, there was very little condensation, and no obvious cavities. The origin of the pneumothorax was not discovered, but the search was not very diligently pursued. The liver was much enlarged and very highly amyloid. The spleen was also amyloid, having the usual characters of the sago-spleen. The kidneys did not present any marked change to the naked eye, but the microscope revealed a slight amyloid degeneration.

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* *Medical Ophthalmoscopy*, by Dr. W. R. Gowers. London. 1879.

In the brain and cord nothing remarkable was found except a very small cerebellum. Its weight, when separated by cutting through the peduncles, was 2 oz. 5 drs. (1,260 grs.)

The cerebellum and cord were hardened, and sections made and prepared in the usual way.

In addition to the obvious fact of the small size of the cerebellum shown by simple inspection and weighing, the microscopic examination, illustrated by the accompanying engravings, gave very interesting results.

A comparison of figures 1 and 2, representing sections of the normal cerebellum and of the case under consideration, will give a general conception of the nature of the lesion. It is obvious that the cortical gray substance in our case is greatly reduced in thickness, and the leaflets narrower and more close together. It is not at all obvious that the white substance is reduced in bulk, and it may be said, at least, that the difference is mainly in the gray cortical substance. In order to a more definite and accurate estimate of this, measurements were undertaken of the cortical substance in a number of sections of normal cerebella. Altogether, the cerebellum from six different individuals was examined, and the thickness of the cortex measured in a considerable number of places in each. The points of measurement were carefully selected, parts being chosen where the section appeared to be as nearly as possible perpendicular to the surface. Of course, an oblique section might give a greatly exaggerated thickness. In each case from 4 to 7 different measurements of typical portions of the cortex were made, and the following are the average thicknesses stated in thousandths of an inch.

1. 12
2. 11
3. 10
4. 11
5. 11
6. 13

We subjoin 14 measurements from the present case, the figures again representing thousandths of an inch.

6
7·5
6
6
7
6·5
6·5
8
6·5
6
6
6·5
6·5
6

From these facts it may be concluded that while the cortex of the normal cerebellum is about the $\frac{10}{1000}$ to $\frac{12}{1000}$ of an inch in thickness, that of the cerebellum in the present case was about the $\frac{6}{1000}$ to $\frac{7}{1000}$, or little more than half the normal. It is to be understood that these measurements were made in sections of cerebella, which had been hardened in chromic acid, the sections being usually mounted in Canada balsam, but in one or two cases in glycerine.

In looking over the sections in this case, we met with several peculiar round gaps in the preparations, two of which are represented in figures 3 and 4. These gaps, it will be seen, are deep in the sulci, and apparently represent little cysts of the pia mater, the surface of the cortex being atrophied by the pressure of the cysts. These were not of frequent occurrence, and may possibly be of little significance.

These obvious changes in the cortex were amplified and confirmed by an examination of the more minute structure. The changes concern chiefly the large cells of Purkinjé, drawings of which, in the normal, and in this case, are furnished in figures 5 and 6. There is clearly a deficiency in the number of these cells. They occur much less frequently in the deep layer of the cortex than they do normally. Not only so, but those which remain have a very different appearance from the large plump cells which the normal cerebellum presents. The cells have lost their characteristic pyramidal shape, and the thick process, which passes towards the surface, is absent or contorted; it would, indeed, be impossible, from the examination of a single cell, or several, to determine in which direction the surface lay. The cells have a shrunken, contorted appearance, and no nucleus is visible. It is to be remarked that these sections were prepared in the usual way, and may be regarded as fair preparations.

The spinal cord was carefully examined, but no change was discovered.

The changes may be summed up as follows:—

1. The cortical gray substance of the cerebellum is little more than half its normal thickness, and there are gaps at the surface, probably caused by collections of fluid in the soft membranes.

2. The white substance presents little apparent reduction, and, in proportion to the gray substance, appears of undue thickness.

3. The cells of Purkinjé in the cortex are greatly shrunken and contorted, their processes being indefinite, and altered in direction.

We have, then, defect or degeneration of the cerebellum, particularly of its cortical substance, so well illustrated by Dr. Coats, as the cause of the symptoms in the lad A. K.; and that the disease in the sister is of the same nature there can be no doubt. The weight of the cerebellum, in our case 1,260 grains, is less than one-half of the average weight, 2,640 grains in males, as given in Quain's *Anatomy*, vol. ii, p. 511. Dr. Crichton Browne, in an article "On the Weight of the Brain and its Component Parts in the Insane" (*Brain*, April, 1879), gives the lightest male cerebellum in 400 cases examined (that of an epileptic dement), as 108 grammes = 1,666 grains, nearly a third heavier than in the case of A. K. His average is, males 150·3 grammes; females 137·1.

Considering the atrophic nature of the condition, its obvious embryonic origin, and such facts as the changes described in the fundus oculi by Dr. Reid, it might be supposed that a similar atrophic condition may have been present in other portions of the central nervous system, but of this there was neither clinical nor pathological evidence, though only the cerebellum and spinal cord were examined microscopically. While not dogmatising on the subject, we are surely entitled to regard the peculiar symptoms described in these cases as due to defect or degeneration of the cerebellum, the conditions affecting chiefly, if not entirely, that organ.

Though defect of the cerebellum is comparatively rare, and, occurring in two members of the same family particularly so, yet there are many cases on record, one even of complete absence of the cerebellum—the well known one of Alexandrini Labrosse, aged 11 years, who had a depraved sexual appetite and mental deficiency, and, save that she often fell, could both stand and walk, up to a short period before her death. Then there is the case of Guérin, referred to by Ferrier in his *Functions of the Brain*, p. 89 (quoted from Longet and Vulpian), whose cerebellum was found, after death, to be almost completely destroyed by disease. "This patient still retained the power of co-ordination of movement, and could walk, only he was observed to reel and totter when he walked."

Dr. Otto gives an account of a case of small development of the cerebellum, where this organ, with the pons and medulla, weighed only 20 grammes, and where the symptoms were chiefly those of mental degradation. He refers also to a case reported by Fiedler, where there was atrophy of the cerebellum and pons, in which the prominent symptoms were, that the patient was unsteady upon his legs, and often fell backwards: also to a case, reported by Meynert, of atrophy of cerebellum and pons, marked by great disturbance of the movement of the legs. As the result of an analysis of the symptoms in these three cases, as well as that of Labrosse, "he comes to the conclusion that the cerebellum has the power of checking or restraining the desires, and, in a wider sense, of regulating the will." (Reported by Dr. Ireland in the *Journal of Mental Science* for October, 1876, p. 469.) This organ has been held by some to be the seat of even more purely psychic functions than of acting as a check upon the desires, such as that it is the seat of memory or of the emotions, and by some, though not many at the present day, the seat of the sexual appetite. Even Nothnagel is inclined to think that the cerebellar hemispheres are in some relation to the psychic processes, which, by the way, may be said of every portion of the nervous system. In many of these cases there must have been disease or degeneration affecting the brain generally, though most marked in the cerebellum, to account for the mental symptoms, and the depraved sexual instinct. Our patient, with his damaged cerebellum, had a good memory. His will was certainly not too well regulated, for, as I have already said, he was obstinate, but not more so than many whose cerebella are not affected. He was not imbecile or insane, though ignorant, and so oppressed with his malady that he often wished he were dead; and, at the end, appreciated much his mother's remark, that there "would be nae cripples in the next warl'.'

Dr. Crichton Browne, in the article above referred to, makes a statement which appears to me to have important bearings on this subject of the supposed psychic functions of the cerebellum. "It would also seem that the cerebellum does not participate to anything like the same extent as the cerebral hemispheres in the loss of substance that is commonly associated with mental disease, for it is at its greatest weight at those very periods of life when the hemispheres are most reduced in weight by the degenerative changes to which they are liable." Of interest also is his observation of the much later development of the cerebellum as compared with the cerebrum. It would appear from his investigations into the weights of the different parts of the brain that the former is ten years later in reaching maturity than the latter.

From the comparatively slow development of the symptoms in our cases it would appear as if the disease were due to an arrest in the development of the organ. There is no doubt, more particularly in the girl's case, that these patients learned to walk without showing any obvious symptoms of inco-ordination of movement, and that *pari passu* with increase in their growth and in the complexity of their relations to their surroundings, came an increasing incapacity for those movements of equilibration, whose chief centre the cerebellum is supposed to be. This absence of distinctive symptoms at an early age is of interest in connection with the fact that cases have occurred of very young children affected with cerebellar disease where no inco-ordination of movement was observed. Nothnagel seeks to get over the difficulty by assuming that disturbance of gait cannot be noted with any degree of accuracy in such young children.

Dr. Hughlings Jackson remarks, in a suggestive article in the *British Medical Journal* for 7th February, 1880, that reeling is the earliest motor symptom in cerebellar disease, and this was the case in our patients, who, from the first slight reel, which scarcely could be observed as such, went on growing steadily worse until the power of co-ordinating their movements in locomotion became so laborious a task that walking any distance was almost impossible and involved excessive fatigue. In the same article Dr. Jackson explains the reeling as being due to paresis of movements of the spinal column. "The legs act erratically, but, in an early stage, they are blameless; they act erratically because they have to run after the trunk, to prop it up in various over-inclinings."

It is to be noted that the tendency in the K.'s was to fall forward; that in the lad's case this was associated with throwing back the head, and in both with an upward tendency of the eyes. Judging from the experiments of Ferrier on irritation of the cerebellum in monkeys and Nothnagel's observations, these symptoms were probably due more particularly to involvement of the anterior portion of the median lobe.

In many cases the upper extremities remain quite unaffected, but this was not so in our patients. I have already referred to the chorea-like movements which took place when an attempt was made to grasp any object, or to bring the fingers to bear with precision on any spot. The object once grasped there was no tremor, and this at once differentiates these movements from those of chorea. The lad generally kept his mouth open, and the reason assigned by his father for this was, that at first he used to keep his mouth wide open in feeding, the better to catch the morsel as it was brought up by his hand. In watching, as I often did, the movements made in grasping an object, their difficulty seemed to me to be due to their inability to estimate the exact position of the object, indeed, I have no doubt that this was so, and it confirms, if confirmation be needed, the observation of Dr. Hughlings Jackson—"The cerebrum contains processes of eye movements and tactual movements for seeing objects; the cerebellum, we may suppose, contains processes of the eye movements and locomotor movements for estimation of distance." (*Clinical and Physiological Researches on the Nervous System*, No. 1, p. 25.)

It is matter of regret to me that in the brother's case, where the ocular deviations were most marked, a more thorough investigation of their relation to the disorders of movement was not made.

Very interesting is the condition of vertigo with visceral sensations induced in the girl when she lies down. On one occasion I asked her to lie down quickly, my object being to watch the movements of the eyes. She was anxious to oblige me, but let herself down very slowly, and raised her head again and again from the pillow, in order to relieve the disagreeable sensation in her epigastrium: she could not describe this sensation, but said she felt as if something would come up and choke her. It does not, however, induce vomiting. I could not detect, but the experiment was not a favourable one, any unusual oscillation of the eyes. That what she describes as her eyes glistening, as well as her inability to see the clock, are due to oscillation of the eyes is most likely.

When she shuts her eyes the feeling is that she is being whirled from right to left. She is sure of this as she lies on her left side, and it is always to that side that she feels being turned. This feeling is occasionally induced when she gets up in the morning, but, as I saw myself, she seeks relief by lifting her head. It is very difficult to understand the cause of this condition, unless it be mechanical disturbance of the brain, due to the increased blood pressure induced by lowering her head. Somewhat similar sensations are induced by the passage of a continuous galvanic current through the head, from ear to ear, as originally observed by Purkinjé (see Foster's *Physiology*, second edition, p. 518).

In relation to Nothnagel's view that symptoms of incoordination do not occur in disease of the cerebellum, unless the middle lobe be affected, the following case, which occurred under my observation, may be of interest. A male, aged 49, was admitted in March, 1878, to Riccartsbar Asylum, Paisley, suffering from chronic mania, with bronchitis and emphysema of the lungs. I find no note of any ataxic symptoms, although a slight inclination to the right side was occasionally observed. He was very shaky and feeble, but there was, at least, nothing striking in his gait. He died suddenly in bed, and at a *post-mortem* I found a large cyst, 2½ inches in length by 1½ in depth, occupying the inferior surface of the left lobe of the cerebellum. It appeared not to involve the substance of the lobe to any great extent, if at all, but must have exerted pressure, especially on the lower parts of the organ.

REPORT OF THE AURAL WORK DONE IN THE GLASGOW ROYAL INFIRMARY, DURING A PERIOD OF TWO YEARS—VIZ., FROM NOVEMBER 1ST, 1877, TO NOVEMBER 7TH, 1879.

By JAMES PATTERSON CASSELLS, M.D., M.R.C.S., Lond.,

Surgeon to the Glasgow Dispensary for Diseases of the Ear; late Aural Surgeon to the Glasgow Royal Infirmary, and Lecturer on Aural Surgery in the Royal Infirmary School of Medicine, Glasgow; Membre-Correspondant de la Société Royale des Sciences Médicales et Naturelles de Bruxelles, &c., &c.

(*Continued from Page 111.*)

DISEASES OF THE EXTERNAL AUDITORY MEATUS.

(*With a Woodcut.*)

OF *malformation* of this canal of congenital origin, no case was met with among the whole number of patients treated—1,037; but there were numerous cases of *deformity* of the meatus, such as general narrowing, stricture, and collapse, at all ages, the result of tissue changes in the membranous part of the canal in infants and young children, and of its cartilaginous part in the adult and the aged. Thus, we had several cases of narrowing of the inner half of the meatus in young children who had suffered for a length of time from chronic muco-tympanitis, this part of the canal evidently undergoing contraction because of its non-ossification, and in consequence of the irritation, sympathetic with the tympanic disease. There were two cases of stricture of the meatus in the persons of young lads who had suffered from chronic suppurative catarrh of the tympanic cavity. The strictures were situated at the junction of the osseous with the cartilaginous portion of the canal, reducing it, in one case, to a mere slit, scarcely two lines in length, and in the other, to an aperture hardly one line in diameter. This is the invariable seat of strictures of the canal in earlier life, because here the inner end of the cartilaginous portion of the meatus is united to the outer extremity of its osseous portion by an intervening layer of yellow fibrous tissue, which is prone to take on contractive changes under irritative causes. It is here, also, I may remark, that sub-periosteal mastoid abscesses make their way out into the meatus, when they do not find an easy exit by one or other of the fissures of Santorini. The other part of the canal where a defect was met with, was at its orifice—viz., collapse. It was found in women at all ages after puberty, and in men and women alike who were very advanced in age; but no case was seen in male patients who were under fifty years of age. The explanation of its frequency in females over puberty, and who were not advanced in years, is, that by long compression of the auricle on the side of the head, a force was exerted on its cartilage, which brought about this artificial collapse of the orifice of the meatus. For if any one will try to experiment on a healthy ear by pressing the helix and anti-helix of the auricle firmly down on the mastoid region, it will be seen that this pressure suffices to advance the posterior half of the external orifice of the meatus until it almost touches its anterior half. In both sexes, in advanced life, the collapse, at least in the males, was due to senile changes in the ligamentous band that unites the cartilage of the meatus and auricle to the temporal bone. The fibres of this ligamentous band, becoming lax, permit of the upper and posterior segment of the orifice of the meatus to droop, so as almost to close the orifice of the canal.

The above conditions of the external auditory canal are not unimportant in their relations to concurrent disease of the tympanic cavity, in so far that they may hinder, or even prevent, the outflow of a discharge from the tympanum, leading to serious consequences at all ages, the result of the pent up discharge in the tympanic cavity making its way into the cranial cavity through the internal meatus, or by way of the foramen lacerum basis cranii. In cases of collapse or narrowing of the orifice of the canal, where it becomes necessary to remove accumulations of debris or cerumen, the difficulty is easily overcome. Traction upon the auricle, upwards and backwards, firmly and steadily, in most cases of this kind, renders the orifice of the canal patent. It is otherwise with the slit-like stricture already described. Here we have to deal with a state of matters which is not amenable to ordinary surgical treatment, such as incision, or even incision combined with dilatation of the stricture. In cases where I have tried incision, the result, after the healing of the incisions made by the knife, was that the stricture was rather tighter than before, even when a dried sponge or laminaria tent was used, and it was only in cases where the discharge was profuse, and where a large orifice was required, that this treatment was undertaken. In other circumstances, *i.e.*, a scanty discharge, these might have succeeded in making the canal permanently opener, but the profuseness of the discharge in the cases treated in this way rendered it impossible as well as dangerous to keep the tents in for any length of time, sufficient even to exert a dilating influence on the structures. Drainage with an ordinary drainage tube was tried, but failed, as had been foreseen. Horse hair was then introduced, but it also failed to drain the discharge from the cavity within the stricture. The best result was got from a small strip of old, well washed cotton cloth, which acted most effectually as a drain, the cavity of the tympanum and the part of the meatus within the stricture being kept free of accumulated matter to the patient's great relief, who described the process as a constant "drop, drop, dropping." The same method of drainage was tried with equal success in one of these cases of stricture of the membranous part of the canal in a young child. Almost as good results have been obtained in these cases from the introduction of a strain or two of loosely spun grey worsted.

Foreign Bodies in the Meatus.—There were eight cases of foreign bodies out of the whole number of patients of which we have records (464), the ages of the patients being from 4 to 47 years. There were also cases in which it was said by the patient that a foreign body existed in the canal, examination, however, showing that such was not the case, a result highly satisfactory to the patients, and serving to light up their hitherto doleful countenances. Seven of these cases came to the hospital at once, no previous attempts at removal of the foreign body having been made. Those were at once removed by means of a syringeful or two of tepid water. The foreign bodies were pins, carpet tacks, slate pencil, and pieces of metal. Only one case, æt. 6, had been subjected to some prolonged and rather rough attempts at extraction of the foreign body before being brought to the hospital. Owing to the great mutilation of the soft parts of the canal, nothing could be done for the removal of the foreign body at the time of admission. It was only after the child had been under observation for five weeks that an attempt could be made for its removal; with the syringe and water alone, a bit of slate pencil, half-an-inch in length, was removed without difficulty. The lessons which these cases ought to teach us are, that unskilled attempts at removal, by instruments which wound the tissues, are not only unjustifiable, but frustrate further and, it may be, better directed efforts. They also teach us the necessity of using simple means—viz., the syringe and water. No one who sees such a case for the first time, however skilled, is justified in using an instrument of any kind other than a syringe, nor is he justified in abandoning the use of the syringe until he has made repeated efforts, with as many failures, to effect his purpose. Even when it comes to this pass, the practitioner should remember, before he takes up an instrument, that nature has an abhorrence to the presence of a foreign body in any part of the organism, and that she will expel it whenever she can. Out of many examples of this, one is worthy of notice, inasmuch as it shows the capability of the ear to extrude a foreign body from the meatus. On several occasions on which I have incised the membrana tympani, and had incautiously prolonged my incision into the vascular zone of the membrane, thereby drawing blood, I have found that the clot of blood left in the wound after the operation, so soon as it separated from the healed incision, was always expelled from the external meatus in a manner which showed that some definite force existed or was operating in favour of its removal. Thus, the first movement was the gradual separation of the clot; then its passage, by the nearest route, to the circumference of the membrane, till it reached the inner end of the wall of the meatus; then, in a few days, it was found to have travelled along the wall of the meatus; and, after a few days more, it would be found near the orifice of that canal, from whence it could be readily removed. The observation of this fact served me in good stead in a medico-legal case, where the question to be decided was, whether the membrana tympani had been wounded or not; the travelling of the blood clot in this case, and the presence of a very minute cicatrix in the membrane, enabling me to say that it had.

In the removal of foreign bodies from the external meatus, one uses a syringe of 6 or 8 ounces capacity, with a nozzle three inches in length, and having an aperture not more than one millimetre in diameter. With such a syringe a steady and continuous stream of water can be driven into the ear with a gradually increasing force, and so directed as to impinge on a part of the foreign body, if this be desired, or that the force of the return current may fall directly on the innermost part of the substance, thus effecting its ejection. While the process of syringing is being carried out, traction should be made on the outer margin of the auricle in a direction outwards, upwards, and backwards, so as to straighten the curvature in the cartilaginous portion of the canal. So well satisfied have I been with a large syringe in the removal of all kinds of foreign bodies from the ear, that I have not yet used for this purpose the vulcanite ear syringe of Marion Sims. I have, however, used it once or twice in the attempt to remove a hard pellet of wax from the meatus, which is almost the same thing as removing a foreign body; but I am bound to confess that I did not succeed. I succeeded, however, in frightening my patient, and in throwing the water all over my own person, this being the result of the sharp stroke which one is directed to give to the piston of this syringe when it is used for the removal of a foreign body. The syringe of Dr. Marion Sims is a small instrument of about half an ounce capacity, with an olive shaped nozzle, having a small nipple upon its apex. This nipple is perforated by an aperture one mm. in diameter. Dr. Sims claims that its capacity, and the size of the aperture in the nozzle, as well as the mode of using it already described, are the advantages which recommend its employment over every other syringe whatever in use for the removal of foreign bodies from the meatus.

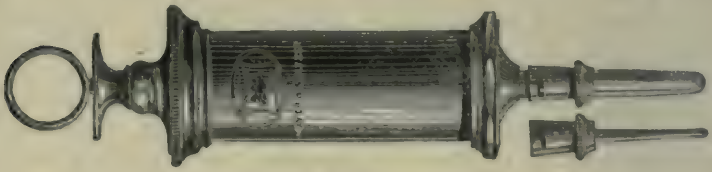

Fig. 7.

Ear-Syringe for the removal of foreign bodies from the meatus, also for the removal of ceruminal masses.

I shall here quote, *àpropos* of my present remarks, a portion of what I wrote on the same subject in the *British Medical Journal*, 26th December, 1874:—"The practical lessons which these cases are intended to teach us, are as follows:—

"1. Make sure, before beginning to remove a foreign body, that there is one present in the meatus. Be certain that you see it; if you are in doubt, take a fine probe and touch what you see so as to get a more perfect knowledge of the substance.

"2. Remove it by the simplest means—syringe and tepid water. If you fail, 'try again,' and again. In all attempts eschew the appearance of violence. Finally, remember that there is no clear evidence that a foreign body left untouched in the meatus has proved hurtful,* while there is abundance of evidence to prove that the efforts made to remove such bodies have caused serious results, even the death of the patient."

NOTES OF A CASE OF ADDISON'S DISEASE.

By J. CRAWFORD RENTON, M.B., F.F.P.S.G.,
Extra-Assistant Surgeon to the Western Infirmary, and Assistant Surgeon to the Eye Infirmary, Glasgow.

(*With Two Woodcuts.*)

M. G., female, æt. 13, was brought to Glasgow from Tain on May 19th, 1879, and on the 20th, I saw her for the first time.

History of Present Illness.—Her sister and guardian informed me that, in August 1878, after returning from a short residence at the sea-side, she began to complain of pain over the stomach and liver, and was troubled with sickness and vomiting. The vomiting recurred at intervals, more or less, for two months, during which time she was confined to bed and attended by Dr. Vass of Tain. She was subject to fits of crying, even when she had no pain, and was often restless at night, complaining of being uncomfortable in every position.

In October 1878, her guardian, with whom she was living, observed that, although the urgent symptoms had improved, her skin was darker than it was before her illness, and it has since gone on getting darker.

Dr. Vass very kindly sent me his notes of the case during the time she was under his care. They are as follows:—"M. G.'s case has always seemed to me a very peculiar one.

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* I have myself removed a small pebble from the ear of a lad, aged 20, whom I saw in the "Glasgow Dispensary for the Diseases of the Ear" three years ago. The history of the case clearly showed that the pebble had been in the meatus for 14 years, and also that no attempts had been made for its removal at the time of its first entrance. Even a pea, if left untouched, will give rise to no damage to the organ; but if unsuccessful attempts have been made to remove it with the syringe, then the pea becomes an active source of trouble, owing to the imbibition of the moisture and consequent swelling. So long as moisture, especially water, is kept away, the pea remains quiescent.

For months of her severe illness, at any rate during its middle period, there was no disease under which she was labouring that I could name beyond a constitutional cachexia.

"Her story is this:—Last summer and autumn she was at bathing quarters, where, I believe, her living was not well attended to. She spent part of the day wading in the sea, picking up shell fish, &c. The prominent symptoms, when first I saw her, had reference chiefly to the stomach and liver, much vomiting and pain, with a jaundiced tinge in the skin, whose cause I set down as inspissated bile, acting like a gall stone passing from the liver. She had repeated recurrences of this state of matters, and a fly blister was applied on 28th August, 1878, and this has left a very remarkable dark mark, which you will observe on the abdomen. It was three months after the application of the blister that I observed the black stain. It seemed to me to diminish in depth of darkness of colour from that time, but probably this may have been owing to the increasing bronzing of the abdominal skin diminishing the contrast. The outside of her thighs was nearly as fair as her face, when I last saw her. I never examined the inside of her thighs for Addisonian patches, but the abdominal skin has been gradually darkening, I should say from midwinter.

"About three or four months ago (*i.e.*, in January), I detected, as I believed, a very considerably enlarged liver, at a time when the abdomen was exceedingly tender, but the enlargement had considerably diminished when I last saw her.

"There were no cardiac murmurs in the earlier part of her illness, and when I detected them, I faintly hoped they might be due to her greatly emaciated condition.

"Her appetite was peculiar. At times she would eat nothing but butcher meat, and in much larger quantity than it was judicious to give her, and at other times nothing would induce her to taste it. An intense craving for cheese was a feature of her appetite.

"As regards the treatment, I have used the usual remedies, quinine, nitro-muriatic acid, bismuth, iron, lactopeptine, &c.

"From an earlier period than her present illness she has suffered from a chronic discharge from the right ear, with rupture of the tympanic membrane; and during the present illness discharge commenced from the left, but in it there is no rupture. On one or two occasions I detected albumen in the urine, and considering her whole condition, I entertain a very unfavourable opinion of her case."

Previous History.—Has always been a delicate child, had measles and scarlet fever, which were followed by strumous ophthalmia, and an abscess in the tympanic cavity, with rupture of the membrane. The discharge has continued, she has never had jaundice or any appearance of dropsy, has had no rheumatism, nor hæmoptysis, but on one or two occasions slight dyspnœa, and in early spring of 1878 had cough and high temperature at bed-time.

Family History.—Distinctly phthiscial on her mother's side. Other members of the family fairly healthy, no relative ever suffered from Addison's disease, so far as can be ascertained.

Present Condition.—General appearance, patient is a thin, feeble looking, dark skinned girl, of small stature, and has an anxious nervous appearance, as if she had suffered from serious illness.

The darkness of the face and upper extremities is so marked that I was led to examine the skin carefully first. The whole body is of a brownish colour, which is most marked over the extensor aspect of the fingers and toes, and over the scapulæ, where spots of dark pigment are distinctly seen, apparently where the irritation of the sleeves of her under dress is greatest, and where scratching has most likely been practised. Over the epigastrium is a rectangular surface, which is very deeply pigmented, and which is the spot where the blister referred to by Dr. Vass was applied. The pigmentation is not specially marked in the axillæ, nipples, umbilicus, or groins, but on the lips and inside of the left cheek pigment may be observed. There is no yellowness of the conjunctivæ or nails, and there is complete absence of any œdema of the extremities. Temperature normal, at times skin acts somewhat freely.

Digestive System.—Tongue moist, appetite fanciful, and from time to time has attacks of vomiting for a few days, with slight pain in the epigastrium, but there is no increase of hepatic or splenic dulness, and no pain in abdomen on pressure. Has had attacks of diarrhœa, but constipation has been more evident lately.

Respiratory and Circulatory Systems.—Pulse small and at times slightly irregular, marked pulsation over the cardiac region, which gives the patient annoyance from the palpitation, more especially on exertion. On palpation there is a slight heaving impulse felt over whole cardiac area. Percussion dulness is slightly increased laterally, which would seem to indicate a certain amount of hypertrophy. Auscultation reveals a mitral systolic murmur, heard much better at apex of heart than over right ventricle or pulmonary artery; this murmur may be either functional or organic, more likely the latter. Patient has felt faint on sitting up.

Genito-Urinary System.—Urine pale, sp. gr. 1018; normal in amount; reaction acid; slight trace of albumen and deposit of urates, no casts on microscopic examination. The urine was examined night and morning on several occasions, and showed slight cloudiness.

Menstruation.—Not yet established.

Nervous System.—At times very restless through the night, cries for nothing, or on the slightest provocation or exertion.

Vision.—Normal. Ophthalmoscopic examination shows no increase of pigment in the fundus of either eye.

Hearing.—Watch is heard on contact in right ear, in which there is a rupture of the membrana tympani, and at a distance of 20 in. in left, from which there is a slight discharge.

25th May.—Dr. Finlayson saw patient along with me, and to him I am much indebted for many valuable hints in connection with the case. He kindly embodied his opinion in the following notes:—

"I think, on the whole, the probability of Addison's disease is very great. The reasons which make me hesitate are—1. The early age and the female sex (I see Dr. Greenhow has two cases of girls, 11 and 13 years, however.) 2. The coexistence of pretty distinct valvular disease of the heart; and 3. of slight albuminuria.

"One can always make a diagnosis of Addison's disease most confidently when the asthenia, discoloration, &c., exist, apart from any recognisable disease, and quite clear of the disorders incident to incipient, irregular, or departing menstruation (chlorosis, menopause, uterine disease.) (The phthisical tendency is quite in keeping with Addisonian disease.) But we know anæmia leads to a soft state of the heart which may lead to dilatation and valvular incompetence, and this state of heart may, in our patient, lead to the slight albuminuria.

"The points in favour of the diagnosis are the following:—1. Obscure cause for such an illness on any other view. 2. The discoloration, which is moderately typical, both in its character and distribution, being deeper on the blistered and irritated surfaces. 3. The vomiting, which does not seem of the ordinary type from digestive disorder. Probably the first thing to look for to clear the diagnosis is the development of more pronounced pigmentation in certain parts, and especially in the mucous membrane of the mouth and lips."

We agreed to recommend good diet; and as regards medicine, small doses of iron and digitalis.

30th May.—Is unable to bear the digitalis, as it increases the sickness, so it was stopped, and hypophosphite of lime, in doses of three grains, thrice daily, along with oil inunction commenced.

15th June.—Patient has been improving in appetite and strength, but the pigmentation is visibly increasing, principally in mouth. Iron and digitalis resumed. At this date she was admitted to the Training Home for Nurses, where she received the most careful nursing.

30th June.—Does not now suffer from palpitation, faintness, crying, or vomiting. Appetite good, and strength decidedly improved, as evidenced by her being able to walk a mile. The cardiac murmur is quite gone (Dr. Finlayson examined the heart at this date and confirmed my opinion.) Pigmentation increasing over scapulæ and in mucous membrane of mouth. Albumen is absent.

27th July.—Patient continued to progress favourably up to this date, when she was seized with vomiting, accompanied by pain in the epigastrium.

Pulse weak; murmur has returned, with faintness and feeling of weakness. Stimulants, in shape of brandy and port wine, were ordered, and poultices over abdomen.

31st July.—Vomiting continues. Dr. Beatson saw patient with me, and suggested soda water and milk in small quantities, and champagne, and this she retained.

1st August.—Pulse very weak; sordes on gums; great prostration. Died at 11 P.M.

2nd August.—*Post-mortem* examination, performed by Dr. Foulis, who reported as follows:—

Rigor mortis is well marked; *post-mortem* hypostasis slight. The body is fairly well nourished, and the skin is of a dark brown colour, which is most marked over the scapulæ, and the shoulder and elbow joints; over the epigastrium is a rectangular dark spot, 4 in. by 2 in., which marks the place where a blister had been applied several months ago; on lips and inside of cheeks are well marked dark spots.

Chest.—*Pericardium* normal. No thickening over the *heart*, except at the middle of the right auricle, which is distended by clot; right ventricle contains a moderate quantity of pale clot, as also the left auricle; left ventricle nearly empty.

The mitral valve segments are thickened, but there is no diminution in the size of the orifice. The wall of the ventricle is slightly hypertrophied.

Both apices of the *lungs* slightly adherent by old adhesions to chest wall; pleuræ otherwise normal. In apex of left lung is a soft cheesy mass, about the size of a walnut, surrounded by a sort of capsule of very dense grey coloured fibrous tissue, and in lower lobes are several smaller, firm, greyish-white nodules, imbedded in a somewhat consolidated red-coloured lung tissue. In apex of right lung is a mass partly greyish and cheesy, and partly pale and perfectly solid, about the size of a walnut. The rest of the lung tissue, especially at the lower and back parts, is slightly œdematous and subcrepitant, and is quite free from tubercle or other similar morbid change.

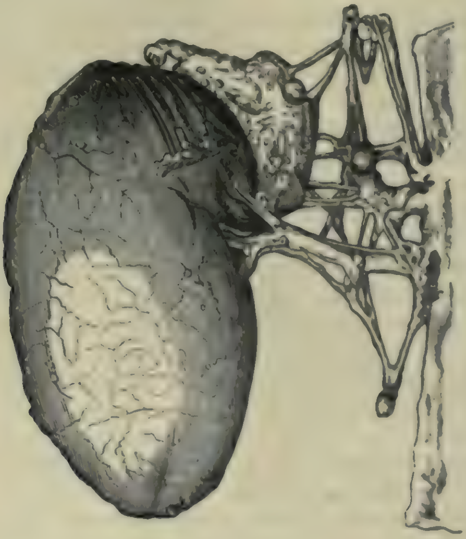

Fig. 1.

Thymus gland is 2 inches long, of a pale salmon colour. The larynx, trachea, and thyroid are normal.

Abdomen.—Spleen—Around it are old fibrous adhesions, and the capsule is thickened and opaque. The texture is firm, of a dark maroon colour, and the organ as a whole appears to be slightly enlarged.

Liver.—Normal in size and texture. Gall duct patent, bile flows freely, and is thin and of a pale brown colour.

Stomach.—Contains about 3 oz. of pale yellow fluid, mixed with mucus. The mucous membrane does not appear to be ulcerated at any point; it is pale gray, mottled with red here and there.

Intestines.—In the ileum the solitary glands are injected and enlarged, so as to appear like pinkish dots. Peyer's patches are injected, but not thickened. In the jejunum, at the upper part, as also in the duodenum, are one or two thickened and injected Peyer's patches.

In the mesentery the lymphatic glands are enlarged, pale, and firm.

Left Suprarenal Capsule is the seat of nodular thickening, and the lymphatic glands on the left side of the aorta are enlarged and pinkish in colour, with pale cortices. This capsule was not incised, but was removed along with the left kidney.

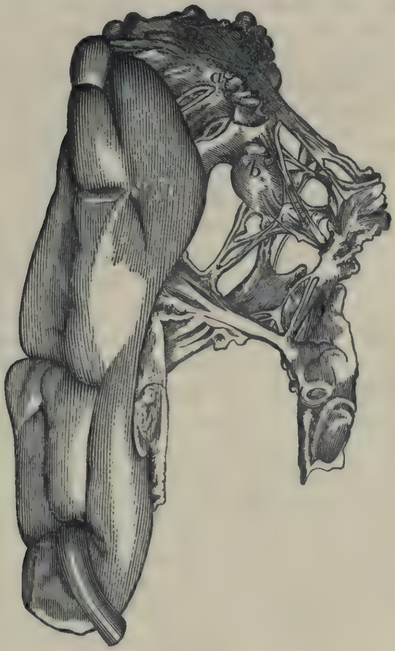

Fig. 2.

Left Kidney.—The capsule stripped off easily; surface mottled with a fine stippling of red and yellow. The cortical substance seems to be injected; pyramids are pale, with purple edges. The tissues around kidney and capsule are very firm and tough.

Right Suprarenal Capsule is adherent to the under surface of the liver, and is in the same condition of nodular thickening as the left. It is very hard, and cuts with a calcareous gritty feeling; and on being laid open it is found to be converted into a series of firm fibrous nodules, some of them cheesy, others calcareous, while others again are of a greyish semi-transparent appearance; they are united by bands of fibrous tissue, which intersect the organ in every direction.

Right Kidney presents same appearance as left.

Right patella and right femur were examined as to the condition of their medulla, and were found quite healthy.

Dr. Foulis very kindly made a minute dissection of the solar plexus and diseased capsules, and he found the nerve sheaths thickened and matted together like the connective tissue generally of that region. The accompanying woodcuts, taken from the dissections, will give an idea of the existing conditions. Fig. 1 represents the dissection of a healthy kidney, capsule, and some of the nerves, showing the relative position of the parts. In Fig. 2 the suprarenal capsule, marked *a* and *b*, is seen to be thickened and contracted, while the nerves are matted together by connective tissue in such a manner as to prevent a clean dissection. A small part of the semilunar ganglion is shown in this woodcut to the right of the letter *b*, and below it are seen parts of the wall of the aorta and renal vessels. The kidney has been cut away, except a small strip next the suprarenal capsule and vessels. In the woodcut the kidney substance appears puckered: this represents the marks of stitches, which the artist has too faithfully represented.

On microscopic examination the normal structure of the supra-renal body was replaced by a dense tissue, composed of small round cells, nuclei, and fatty debris.

Remarks.—On comparing the cases detailed by Dr. Greenhow, in his admirable work on *Addison's Disease*, with the one whose points I have now endeavoured to describe, I feel impressed by their strong similarity, more especially in the case mentioned by him as being aged 12¾ years.

In the case before us we have a distinct strumous history, well marked prostration and anæmia, with sickness and vomiting, followed by deep bronzing of the skin, growing gradually darker, and accompanied by pigmented patches on the lips and inside of the cheeks. During the remissions in the urgency of the symptoms, more especially when the patient had decidedly improved, and was able to walk some distance, the pigmentation went on increasing, which is not usually observed. Finally, we have Dr. Foulis' report on the *post-mortem* conditions, along with the dissections shown by the woodcuts. Taking all these facts into consideration, I think I am right in concluding that a typical case of Addison's Disease has been recorded.

CURRENT TOPICS.

Glasgow and West of Scotland Medical Association.

The Annual General Meeting of the Association was held in the Faculty Hall, on 29th January, 1880, Dr. A. Robertson, Vice-President, in the chair.

The minutes of last annual meeting having been held as read and approved of, the election of Office-bearers was proceeded with. The following is a list of those elected :—

President—Dr. W. T. Gairdner.
Vice-Presidents—Dr. A. Patterson and Dr. H. Thomson.
Editor—Dr. Joseph Coats.
Treasurer—Dr G T. Beatson.
Secretary—Dr. Alex. Napier.

General Business Committee.

The Office-bearers ex-officiis.

Dr. M‘Vail.
Dr. M‘Laren.
Dr. E. Duncan.
Dr. G. H. B. Macleod.
Dr. J. Wilson.
Mr. H. E. Clark.
Dr. M‘Call Anderson.
Dr. J. Finlayson.

Dr. H. Thomson, Treasurer, read the state of Charge and Discharge for 1879, which showed that the total receipts for the year were £424, 8s. 7½d.; and the expenditure, £309, 13s. 5½d. To this he added the following note :—"The balance at the end of the year is shown, by the foregoing statement, to be increased from £97, 9s. 8½d. to £212, 4s. 10½d., amounting to a rise of £114, 15s. 2d. The result of the rise in the price of the *Journal* is thus shown to be quite satisfactory. By way of showing further the effect of the rise of price on the Membership of the Association, I have gone over the list, and have found the changes during the year 1879, including withdrawals at the end of 1878, when the rise of price was made known, to be as follows :—

Withdrawals, - - - - - -	28
Deaths, - - - - - - -	6
Loss of Members, - - - - -	34
New Members, - - - - - -	38
Showing a gain during the year of -	4

"The total members on the roll are 308, but five members are owing three or more years, and should be struck off, leaving the total at 303. Besides these, there are four owing their subscription for 1878, of whom two have paid that for 1879; fourteen who are owing for 1879; and three who still owe a balance of their subscription for 1879."

It should be added that the addition of new members for 1880, brings up the number of subscribers to 317, and that this number does not represent the total circulation of the *Journal*, as there is a considerable sale through the booksellers.

Dr. Joseph Coats then read his Editorial report, of which the following is an abstract:—

EDITOR'S REPORT.

"DURING the year 1879, the *Journal* has, as the subscribers are aware, been issued in an enlarged form, three of the issues comprising 88 pages, and the others 80. The Editor has met with several encouraging remarks, and has had frequent indications that the *Journal* is highly esteemed, both at home and abroad.

"During the year the circulation reached a higher number than it has attained since the *Journal* was taken up by the Association, and already there are a sufficient number of new subscribers for the year 1880 to more than counterbalance the natural falling off.

"In view of the satisfactory financial position which the Treasurer's Report shows, the January and February numbers contain each 88 pages, and it is probable that this number will be retained in most of the issues of the year. As announced in a former editorial notice, it is hoped that before long the membership will be sufficient to warrant a permanent increase to 96 pages, but it is not considered that this position has been reached as yet. While expressing his gratification at the large measure of support which has been received from the leading members of the profession, the Editor would point out that the *Journal* is naturally regarded by the public outside Glasgow as *the* criterion of the position of Medical Science in Glasgow, and of the quality of her Medical Schools. Were this more fully understood, perhaps the *Journal* would be more frequently the vehicle of communications which are sent elsewhere in the expectation of a wider circulation. The *Journal*, having a widely extended, though not a very large, circulation both at home and abroad, and being frequently quoted from by other

Journals, forms a medium, the value of which is, we believe, too little esteemed in Glasgow itself.

"The Editor cannot conclude without referring to the very valuable assistance which he has received from those gentlemen who have been connected with him in the management of special departments of the *Journal*. Dr. Napier has succeeded in collecting a large amount of most valuable and interesting information in his Medical Items, and has shown an unusual amount of perseverance and industry, both in procuring abstracts of papers from others, and in writing them for himself. Dr. J. W. Anderson and Dr. W. G. Dun, have also been very energetic in obtaining reports of cases from the Royal and Western Infirmaries, and we are sure that their efforts are highly appreciated."

The Treasurer's and Editor's Reports were formally adopted.

The Chairman then pointed out the fact that an unusually large surplus remained in the Treasurer's hands, and proposed, in the first place, that the sum of £100 be set aside as a guarantee fund. It was afterwards agreed that the rest of the surplus should be divided among the editorial staff, and a small sub-committee was appointed to apportion the funds among the four gentlemen who had been engaged in the various departments of the work.

RESIGNATION OF PROFESSOR COWAN.—We regret to learn that Dr. J. B. Cowan has been compelled, owing to the state of his health, to resign the chair of Materia Medica in the University. We trust that through the leisure thus afforded him, his health will soon be restored.

3 FOREMOUNT TERRACE,
PARTICK, *27th January, 1880.*

DEAR MR. EDITOR.—In June, 1878, you were good enough to allow me to make, through your pages, an appeal on behalf of one of the children of the late Dr. John Murray. I asked for subscriptions in aid of her candidature for election to the London Orphans' Asylum, Watford. That appeal brought in several sums which, with other amounts got from other sources, were of material aid in securing her success yesterday, after two failures. Allow me, therefore, by your renewed favour, to thank those generous friends, in so far as they belong to the profession, and to add that the little girl is a most promising child, and will turn out, I am sure, a credit to those who have befriended her.—Yours most truly,

JAMES B. RUSSELL.

THE ENDOWMENT OF RESEARCH.

A CONTRIBUTOR has furnished us with the following remarks, in which we most cordially sympathise—

"By a short notice, which appeared a few weeks ago in the *British Medical Journal*, attention was called to a report by M. Charles Richet, concerning the physiological laboratories of Holland as contrasted with those of France, and our contemporary institutes anything but a favourable comparison, in this respect, when he confronts our scientific destitution with the advantages adapted to favour the progress and development of physiological study, enjoyed by our more fortunate neighbours, and justly laments that there is 'nothing in London to compare with the facilities at the physiological laboratories of the Museum of Natural Science, or of the Collége de France in Paris.' In the physiological institutes of Holland there are several distinct departments set apart for the study of histology, vivisection, physiological chemistry, and physiological physics, and besides, an instrument maker is appointed, who has charge of the instrumentation and apparatus of the laboratory. These benefits are not peculiar to Holland and France. In all the larger schools of Germany and Austria fully equipped physiological and pathological institutes have been long ago established, and handsomely maintained by government.

"The problems presented to medical science for solution are of such vital importance, their value when once ascertained so significant and of such moment to the public, that one is at a loss to account for the want of encouragement given to men who devote their time and energy to its study. Our rulers, very properly, do not hesitate to follow its dictates when the interests of the community are at stake—as, for example, when epidemics of infectious disease prevail. Has not scientific medicine aided in this class of subjects most materially? By the advances of physiological and pathological chemistry in its application to state medicine, assisted by biology, many important facts have been established in connection with the causation of disease, the influences which promote the propagation and multiplication of contagia, and the remedies to counteract them. Thus, while our government have done much to promote the application of those laws, conducive to the more perfect growth of the people, rendering their life more vigorous, their decay less rapid, and their death more remote, at the same time they have failed to encourage those who devote their energies to the discovery of facts which unite detached observations, supply the connecting links between otherwise disassociated phenomena, and lead, first, to the apprehension of special, and subsequently to the deduction of general laws. That the public purse should materially aid the labours of men who devote themselves to the advancement of the higher branches of medical science is evident from the fact that the products of their labours are of such a nature that classes rather than individuals are concerned in their benefits. The qualities which render their services of value are so remote that only those who are unable to recompense the worker become acquainted with their value, whilst those who profit are totally ignorant of the labours of which they are reaping the benefit. At present, to those who manifest an aptitude and inclination for a scientific career, there is nothing offered but an uncertain future. At the very commencement, the young man is met with difficulties of all kinds, and for this reason many are obliged to abandon it, whilst those who are more fortunate, or more determined in their purpose, whose greatest ambition is the discovery of new truths, and the approval of their fellow-workers their greatest reward, can only look forward with doubt to their future, in the prospect that they may be made independent by the rare opportunity of a vacant professorship. Many men, possessed of abundant talent and untiring energy, willing to devote themselves to the pursuit of science, if only channels for operation existed, are compelled to maintain themselves by more commonplace means. But this is not the only result of the want of encouragement; much of what we should be able to procure from our own votaries of science, we are at present compelled to seek from the learned leisure of Germany, France, or other country, ruled by a government that recognises the requirements of science, is enlightened to its duty in this respect, responds to the appeal, shows its sympathy, and is more material in its bounty than the authorities who rule over us. We have no desire that science, or rather that which has been wrongly called science, should be dragged into vulgar notoriety by those who choose to devote their talents and energies to pleasing and amusing the public. Money spent for the purpose of carrying on sensational scientific courses is worse than useless, for it is as impossible to teach science by a few lectures as it is injurious, in a similar manner, to convey a knowledge of advanced speculative philosophy; it makes a man more conceited, without rendering him more profound.

"It is for a quieter yet more enduring form of work that we would seek encouragement; to be enabled to add little by little to our knowledge of disease, by quietly and submissively working from year to year, that we may ultimately add something to what is already known, is what we seek: feeling confident that when the task of our generation is over other workers will continue to advance the great work. It is often asked, what possible good is there in this multiplicity of facts which medical science is accumulating? It is only ignorance that can ask such a question. Let us have means of collecting more truths, and we will sooner or later show the connection between those apparently sterile observations, and give evidence of their use to society and the world. It is from the curiosities of the philosopher that the inventor procures his material, which, by discovering its hidden utility, he applies to the good of mankind.

"It is interesting to contrast the rewards bestowed upon those who cultivate the destruction of human life—successful soldiers—and those who, by their peaceful labours, prevent disease, remove deformity, and abolish suffering. The one is covered with honours and decorations, and compensated by pensions, as a reward for destroying the half savage Caffir or Afghan, or for carrying destruction successfully into an enemy's country (we do not deny them their reward), whilst the man whose untiring labours, indefatigable zeal, enthusiasm, and talents have led him to discover and apply laws which regulate health and disease, is either left unrewarded, except by what he may find in an approving conscience, or is remunerated by a small honorarium, bestowed with ill grace.

"What can be more eloquent, and what more true, than the contrast of the encouragement given by this country on the one hand, and by the great Continental powers on the other, to the higher branches of medicine. The evil is a great one; we must seek a remedy. The attention of the country and legislature should be called to it by those who are best able to appreciate its faults, and most anxious to see our condition improved. Can we have a more favourable opportunity than the present? When the report of a University Commission is about to be considered, and reforms in connection with higher education are soon to occupy the attention of Parliament, surely it is not unfitting that we should ask to be set on a par with Germany and France, in respect to the endowment of research, and seek to be enabled to offer those advantages to men who desire special education in scientific methods, which they require at present to prosecute in some of the schools of the Continent."

REVIEWS.

A Handbook of Physical Diagnosis, comprising the Throat, Thorax, and Abdomen. By Dr. Paul Guttmann, Berlin. Translated from the third German edition, by Alex. Napier, M.D., Glasgow. London: The New Sydenham Society. 1879.

The experience of most of our readers will bear us out when we say that, as students, it was mostly with a certain sense of bewilderment that we followed the careful physical diagnosis of a painstaking teacher. Even when we got towards the end of our student career, and began to have the fear of a clinical examination before our eyes, the mysteries of percussion and auscultation were still to a great extent unsolved. It was much if, at this stage of our career, we had sufficient confidence in our own powers to be able to demarcate, with an ease satisfactory to ourselves, the normal cardiac or hepatic dulness. And when we entered on the duties of the practitioner, we had, for a time at least, to go through a somewhat severe process of observation and experimentation, before we acquired any confident belief in the connection of physical signs with pathological phenomena. In this period, during which we are acquiring a more or less valuable amount of personal aptitude, we are too apt to forget the directions of our teachers, and to get into "a way of our own," which may be better than no way, but is very likely to be inferior to the methods of those who have been carefully studying the subject under the most favourable conditions.

When a conscientious general practitioner has become familiar with the more prominent features of the general run of cases, and has acquired some personal aptitude in the methods of physical diagnosis, it is of immense importance that he should for once review his position, and in the light of his acquired experience, as it were go back to the student's position. For this purpose a thoroughly trustworthy guide is necessary, and we believe that such a guide is furnished by the volume before us. We are persuaded that if the practitioner will carefully study this work, and conscientiously carry out its suggestions, he will find an incalculable advance in the realistic appreciation of diseases by means of their physical phenomena.

The work is not properly a student's book. It presumes a certain familiarity with the diseases of the organs with which it deals, and the endeavour is made to connect the physical phenomena with the pathological conditions present in these diseases. It was therefore a wise decision of the Committee of the Sydenham Society to place a translation of it in the hands of its Subscribers, comprising, we presume, the bulk of the more intelligent practitioners in the United Kingdom. We should recommend these to give it a careful perusal, and we believe that the effect will be the promotion of a more scientific attitude on the part of the practitioner towards the diseases he has to treat.

In the remarks already made, the scope of the work is indicated. Its method is perfectly simple and direct. Under the various sections the different methods of exploring each organ are first discussed, and then the conditions likely to be met with are described. These states are not merely enumerated, but the mode in which they influence the physical conditions and so effect the results of physical examination, are fully entered into. The advantages of this method of treatment are apparent.

In a book covering such a wide range of subjects it is impossible to give any sufficient idea of its scope, or any detailed criticism of its contents. As might be expected, all the sections are not of equal value, the appendix on Laryngoscopy being perhaps the least satisfactory.

There is one feature of the work which seems to us to enhance its value for the English practitioner, and that is, the close connection which is drawn between pathological anatomy and physical diagnosis. It will not be disputed that the existing English practitioner has not as a rule received that careful training in pathological anatomy which is to be obtained in the German schools, and it will be readily acknowledged that medical practice in Germany is, at the present time, largely dominated by the school of pathological anatomy, founded by Virchow. This fact comes out very strongly in Niemeyer's well known Text-book of Practice of Medicine, and the great estimation in which this book is held by many is largely due to this. The present work has a similar character, and it may even be said that, to a great extent, even the terminology is that of pathological anatomy. We believe that in this regard the book will be of peculiar value to the practitioner for the purpose referred to above.

There is perhaps one criticism which might be made on the style of the work, and it is, that for one who would read it continuously there is an exceedingly rigid systematisation of the subject, and a certain want of that freedom of style which carries one on from page to page. At the same time, the nature of the subject hardly admits of a different style of treatment, and viewed as a book of reference, the quality referred to may be regarded as a distinct advantage.

In regard to the manner in which the translation has been executed we have nothing but praise to accord; the German idioms have been carefully rendered into good English, and although the book as a whole distinctly preserves, as it ought to do, the main characteristics of a German medical work, yet this cannot be said of the literary construction.

Clinical Researches on the Therapeutic Action of Chloride of Ammonium in the Treatment of Hepatic Disease. By WILLIAM STEWART, M.D. London: Smith, Elder & Co. 1879.

THE muriate of ammonia, as it used to be called, occupies a curious place in our list of remedies. Much employed and highly prized by some, it is scarcely ever used by others, and the varied nature of the affections in which it is extolled by its advocates, appears very remarkable to those who seldom have used it. Its reputation in the treatment of neuralgia stands very high, and it has been chiefly in this connection that the writer of this review has employed it, sometimes with what appeared brilliant success, at other times, of course, without any benefit.

The late Professor Easton, in his lectures in the University here, many years ago, spoke of its use in various affections, and used to mention it as being given in Germany, particularly, in cases of "enlargement of the liver, spleen, and mesenteric glands." In the volume of the *Glasgow Medical Journal* for 1855, its use was recommended by Dr. Lindsay, of this city, in various constitutional affections, and particularly those of the glandular system. It has likewise been employed in various inflammatory affections. Of late years its use has been strongly advocated in the inflammatory affections of the liver, including even hepatic abscess, so common in hot climates; and, in the present volume, Dr. Stewart, who has been writing occasional articles on the subject during the last ten years, has summed up the results of his experience of its use in these disorders.

He recommends it strongly as of the greatest value in these hepatic affections, but he insists as strongly upon the necessity of waiting till the more urgent, feverish symptoms have been allayed by mild purgatives and diaphoretics, while, at the same time, a mild and unstimulating diet must be adhered to.

He likewise insists very strongly upon the necessity of confining the patient absolutely to bed, and not allowing him even to rise to pass water, &c. To the absence of these precautions, and the stopping of the treatment too soon, he attributes the want of success in the hands of some who have tried the remedy. He points out likewise that the action of the medicine, in the first instance, is often associated with peculiar and disagreeable sensations in the hepatic region, which may induce the physician to suspend the treatment, although Dr. Stewart regards these as the first indications of its beneficial operation. The dose he employs at first is 20 grains twice or thrice daily, and he often continues it in 5 grain doses for a long time, in the more chronic stage of the enlargement.

The results published by the author of this little book, both as regards individual cases and general statistics, are of such a favourable nature as to demand from the profession in India a fair trial of this treatment, and the opportunities in that country are so great for such observations that we need not wait long for further evidence on the subject.

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1. *Atlas of Skin Diseases.* By LOUIS A. DUHRING, M.D. Parts I-VI. Philadelphia: J. B. Lippincott & Co. 1876-79.
2. *Photographic Illustrations of Skin Diseases.* By GEORGE HENRY FOX, A.M., M.D. Parts I-IV. New York: E. B. Treat & Co. 1879.

IN no branch of medicine has the characteristic activity of the Americans been more conspicuous of late years than in dermatology; we believe, indeed, that the progress which has been achieved by them in this direction is too little known or noticed in this country and on the continent. The writings of such men as Bulkley, Duhring, G. H. Fox, Piffard, and others, the issuing of what is certainly the best journal of cutaneous medicine in the English language, and the publication of such atlases as those under consideration, are all contributing to the formation of an American literature of dermatology, of which its authors have reason to be proud.

Duhring's Atlas consists of a series of chromo-lithographic illustrations, taken from actual cases, and of nearly life size; it aims specially at exhibiting cutaneous affections as they occur in America—an object which will be sure to commend it to the transatlantic practitioner; but so far as we can judge from these plates, the ordinary forms of skin disease which prevail in the old and new worlds differ from each other very slightly indeed. These illustrations are artistically executed, and display remarkable accuracy both in drawing and colouring, though in the latter respect a tendency to excessive vividness or overcolouring is now and then noticeable. As test plates, one naturally turns to those representing scabies, psoriasis, and several of the more familiar skin diseases; these we find exceedingly life-like and truthful. The portrait of scabies, in particular, is much the best we have seen in any atlas. Two plates, also, are devoted to the illustration of sycosis; we are thus enabled to contrast the tubercular, lumpy, uneven surface, and tumefied condition of skin, so characteristic of the parasitic variety, with the circumscribed peri-follicular inflammation which distinguishes the non-parasitic form. The text of the work is concise and clear; a short history of the case portrayed is given, followed by a brief general account of the disease and its appropriate treatment. On the whole, this atlas is certainly not inferior to any with which we are acquainted, and we heartily commend it to the support of the profession. It will be completed in eight or ten parts, each containing four plates.

Fox's illustrations (not to be confounded with the atlas published by the late Tilbury Fox), being photographic, are absolutely accurate as regards drawing, but the colouring, which has been done by hand, seems to us somewhat dull and wanting in decision. Many of the plates, also, are very much under life size, so small that the anatomical details of the disease depicted are quite lost; but wherever their size approaches that of life, the likeness rendered leaves little to be desired—the representations of acne vulgaris and comedo, for instance, being nearly perfect. The merit of the plates, therefore, is very unequal; thus, the picture of ichthyosis, though one of the smaller photographs, is perhaps the best of the series, while the portraits of leucoderma and chromophytosis (tinea versicolor under a new name) are far from satisfactory, the very striking difference between the coloured and the colourless areas being badly defined. The accompanying text is brief and eminently practical. This series of illustrations will be completed in twelve parts, each of which includes four plates.

Deaths in Childbed and our Lying-in Hospitals. By Æneas Munro, M.D. London: Smith, Elder & Co. 1879.

The author writes avowedly to advocate the erection, in the western district of London, of a model maternity hospital, and by this he means "a series of from fifteen to twenty cottages, with four patients in each—each patient having a room to herself; the cottages to be situated around an open space of ground, in which the patients may walk, when expedient, to regain health and strength."

The work consists essentially of two parts, the one, and it would almost seem the larger, being the opinions of authorities on the great question of home *versus* hospital lying-in as affecting the mortality of mothers and children; the other, Dr. Munro's comments on these opinions. From the way in which this latter part of the work has been performed, we do not believe that the commentator will make good his claim to be advanced to the rank of an authority.

On Phthisis and the Supposed Influence of Climate. By WM. THOMSON, F.R.C.S. Melbourne: Stillwell & Co. 1879.

THIS is a pamphlet of 120 pages devoted to an analysis of the statistics of consumption in the Melbourne district of Australia. And certainly the author draws a very grim picture. Phthisis, indeed, would seem to be the most fatal disease in Victoria, and the larger proportion of deaths is among the native born, and those who have resided for a considerable time in the country. Melbourne is represented as having a very high phthisical death-rate; *e. g.*, the deaths from all causes in 1877, between the ages of 20 and 35, were 616, and of these 224 are attributed to phthisis. These are very startling figures; but it is well to remember that all Australian authorities are not agreed on the question at issue. Statistical facts cannot be said to be "chiels that winna ding," as every one knows they may be used to bolster up very different conclusions. We are not in a position to hold the balance in this case, but are satisfied that this pamphlet should be perused by all who are in the habit of sending phthisical cases from this country out to the colony. Indiscriminate transportation of consumptives cannot be too strongly condemned; and if the author induces those who are in the habit of recommending such a course to reconsider the question in the light of the facts, he will have rendered a substantial service both to the profession and the public. Abundant statistics are given and the text is clearly explanatory of them, although the style is not always to be admired, being often turgid, and sometimes degenerating into "slang."

REPORTS OF HOSPITAL AND PRIVATE PRACTICE.

GLASGOW ROYAL INFIRMARY.

REPORTS UNDER THE SUPERVISION OF DR. J. WALLACE ANDERSON.

FROM DR. CAMERON'S WARDS.

ACUTE ABDOMINAL ABSCESS SIMULATING RETENTION OF URINE. —J. R., æt. 16, painter, was admitted on 10th December, 1879, suffering from an abdominal abscess. Five weeks before, he had fallen on his abdomen, from a two storied building. He felt a little pain at the time, but was able to resume work next morning, and continued at his duty for a fortnight. The pain in his abdomen then returned, accompanied by shiverings, and he took to bed. Four days later he had symptoms of retention of urine. The family medical man, having been summoned, found a globular, tense, but fluctuating tumour in the hypogastrium, dull on percussion, and in all respects like a distended bladder. The patient was making constant efforts to pass water, but only succeeded in getting rid of a small quantity at a time. The doctor experienced no difficulty in passing a catheter as far as the neck of the bladder, but on reaching that, the point of the instrument diverged to one side, and only a small quantity of urine flowed through the catheter. This made no impression on the swelling above the pubes, and in no way relieved the distress of the patient. The operation was repeated several times with the same result. On the same night Dr. Cameron was asked to see him in consultation, and he also experienced a like difficulty with the catheter; it always diverged to right or left as above described, and it did not feel as if it were in a free cavity. The finger in the rectum showed that the catheter lay in the urethra, and that the divergence occurred beyond the prostate. There was a bulging swelling beyond the prostate quite like the distended bladder. The aspirator was now used, the needle being inserted, of course, above the pubes, when instead of urine, as was expected, pus of a very fetid character was withdrawn in large quantity, and the globular swelling, which was soon emptied, was thus shown to be an abscess. His distress was at once relieved, and the rationale of the symptoms indicated. Clearly the abscess, which in every respect simulated the distended bladder, had pushed down that viscus in front of it, so that its fundus lay close to the urethra, thereby producing a deformity closely resembling complete inversion of the uterus. It is a matter of physiological interest, that the quantity of fluid at high tension, occupying the usual position of the bladder, should not only have conveyed to the patient's mind the idea that his bladder was hyperdistended, but should have so affected the sentient nerves of the part as to induce the most powerful reflex muscular contractions similar to those in cases of retention of urine. The relief experienced from the above procedure continued for a few days, when again the same train of symptoms supervened, and he was brought into hospital. On admission, patient was pale and emaciated, and pulse and temperature were high. In the lower part of the abdomen, above the pubes, there was a large globular swelling, fluctuant and tender to touch. On passing the finger into the rectum, a fluctuating swelling could be felt, which nearly closed the bowel; it gave a clear note on percussion, which was not the case on the former occasion. He had constant desire to make water, but could only pass about a couple of drachms at a time; there was also constant tenesmus.

On the 11th December an incision was made into the tumour in the middle line, when there was an escape of gas, and about sixty ounces of very stinking pus, a drop of which was at once put under the microscope and found to be thronged with vibriones. This circumstance led Dr. Cameron to express to the students present the opinion that the abscess probably had a connection either now, or at some time during its formation, with the bowel. On passing the finger into the cavity the bowels could be felt, but they were so matted together as quite to circumscribe the cavity. This of course made it clear, that the abscess was intraperitoneal. Two large drainage tubes were inserted and antiseptic dressings applied. The abscess being a septic one, this was only done to assist in deodorising its contents. On the 13th it was found that the dressing was covered with fæcal matter, and this continued more or less till the 3rd January, when it entirely ceased. As the abscess contracted, the drainage tubes began to be forced out of the wound in the usual way, and were accordingly from time to time shortened until they were removed, the one on the 7th and the other on the 14th January. On the 26th, the wound was healed, and the patient was sent home cured.

FROM DR. DUNLOP'S WARDS.

TUBERCULOUS AFFECTIONS OF THE TESTICLE—*27th January.*—Dr. Dunlop showed two cases of this disease to his class this morning on which he made the following remarks. Since the beginning of the session I have been able to present to your notice several cases of sarcocele, or solid tumour of the testicle. In Ward XIII you have seen the simple and the syphilitic variety, and now we have to speak of two forms of the tuberculous sarcocele or scrofulous testicle, examples of which have just been shown you from Ward XV.

The first case is that of a boy on whom we operated last week. He had what is termed a *hernia testis*, or fungus of the testicle, a condition of things not dependent on malignant disease but upon the presence of tubercle deposited in the testicle itself. It had not been of long duration and there was no great protrusion of the organ. The disease began some months ago in the right testicle, and while that organ was in a swollen condition he got it injured, and thereafter as he tells us a gathering formed and broke, and this opening in the scrotum has continued to discharge ever since. By and bye, instead of healing up as was expected, a growth formed at the opening and this continued to grow larger every day. I pointed out to you that from the surface of the fungous granulations there was excreted offensive pus, and in their centre was an opening which led down to the testicle; this latter lay close to the integument, the skin being adherent all round the base of the growth. The growth itself was not large. Those of you who examined it know that it felt like the testicle protruding through the skin of the scrotum. The tuberculous matter in the testicle had softened down, and probably getting an impetus from the injury it had received, suppuration had ensued. The fibrous covering of the testicle, the *tunica albuginea,* giving way, permitted that organ to be protruded from the scrotum and to form a *hernia testis.* It is thought that by the elasticity of the *tunica albuginea* the testicle is squeezed out of its site and made to present itself as a fungous growth upon the surface of the scrotum. Some of you may remember a somewhat similar case we had last summer. In that instance the fungous protrusion was very small and the edges of the opening were only slightly adherent. The treatment pursued was to pare the edges and apply a graduated compress to the protrusion. This plan was successful. In the case before us I adopted the method recommended by the late Mr. Syme. I shaved off the protruded portion of testicle, separated the edges of the scrotum completely from the organ, and after paring them, pushed the testicle well back into the scrotum and then stitched the edges of the skin together. You will notice that the edges have firmly united and that the patient appears well.

As only a small portion of the testicle has been removed it is not likely that its functions will be impaired to any appreciable extent.

The other case is that of the young man with strumous disease of the elbow, who has in addition a scrofulous testicle. In his case the strumous diathesis is well marked and there is no history of injury. There is no fungous protrusion in this instance, but only a fistulous opening of small size leading down to the body of the testicle. The organ itself feels quite smooth, is very much enlarged and somewhat soft and pulpy. Beyond keeping the parts clean and supported, little local treatment is needed. In this case we have in the meantime to trust entirely to constitutional measures. The young man, in addition to being well fed, is getting malt extract with cod liver oil, and already he is beginning to improve in his general health. Should this improvement continue, the tuberculous matter in the testicle will likely become softened down and may be almost completely removed by the suppuration without the organ being destroyed or there being any necessity to perform castration. It is only when the organ is either completely protruded and disorganised, or when the small portion that is left is infiltrated with tubercle and likely to keep up the suppuration, that the severe measure of castration is needed.

DR. DUNLOP ALSO SHOWED A CASE OF PHAGEDENIC ULCER IN GROIN TREATED BY POTASSIO TARTRATE OF IRON INTERNALLY AND EXTERNALLY.—In this treatment, so extolled by Ricord, he had great faith, and the present case illustrated its efficiency in arresting the unhealthy action of the sore. Phagedena attacks the soft sore most readily, but certainly the Hunterian also occasionally. Nor will it, in the latter case, prevent the occurrence of secondary symptoms as some have supposed. Dr. Dunlop had found, as Ricord first pointed out, that pus from a phagedenic sore gave negative results on innoculation. It did not reproduce the sore any more than laudable pus.

WESTERN INFIRMARY.

REPORTS UNDER THE SUPERVISION OF DR. W. G. DUN.

FROM PROFESSOR MACLEOD'S WARDS.

CASE I. NECROSIS OF METACARPAL BONES—"SPLITTING" OF HAND—RECOVERY.—W. G., aged 19, was admitted 20th November, 1879. The patient was a strong healthy-looking lad.

About two months before admission a heavy piece of metal had fallen upon his right hand, wounding it severely, and fracturing the fourth and fifth metacarpal bones. He attended the dispensary of the hospital for some time. The wounds healed, and the fractures united, but one or two sinuses remained open, and discharged pretty freely. When admitted to the ward there was great fulness of the palm, and a considerable amount of hard firm deposit. On the palm over the fifth metacarpal bone there was a small sinus leading to a piece of dead bone, and on the back of the hand another sinus over the fourth metacarpal bone, also leading, apparently, to the same dead bone. On 26th November Dr. Macleod operated, splitting the hand right between the fourth and fifth metacarpal bones. The necrosed bone was gouged away, and a piece of iron, which had been driven into one of the bones, was also removed. No vessels required to be ligatured. The parts were brought together with silver sutures, and antiseptic dressings applied.

Two days after the operation the dressings were removed, and the hand was found looking remarkably well. The patient was now dismissed, and attended regularly to have the hand dressed. The case progressed quite satisfactorily, the wound healed up, the thickening gradually grew less, and the lad had every prospect of obtaining a good serviceable hand.

CASE II. SINUSES OF FOOT.—J. G., aged 3, was admitted 29th November, 1878. This child was by no means in good health, and appeared to be the subject of hereditary syphilis. He was admitted on account of an unhealthy ulcer at the base of the second toe on the dorsal surface; there was also a sinus below on the plantar surface. About five months before admission his foot had been trodden upon; an abscess formed, burst, and continued to discharge. On 2nd December Dr. Macleod operated in a manner similar to the previous case, splitting the foot between the great and second toes, but no dead bone was found. The unhealthy tissue was scraped away, chloride of zinc applied, and the wound closed by sutures, and dressed antiseptically. The child was put upon full diet, cod liver oil and wine. Small doses of grey powder and quinine were also ordered. Improvement in this case was slow, and the child did not remain long enough to receive the full benefit of treatment. He was seen, however, at intervals, and on 10th February, 1879, the date of the last note, the foot was almost whole. It has since healed entirely.

These cases are in themselves of no particular interest, being of ordinary every day occurrence. They are narrated rather in order to draw attention to the mode of operation adopted. In disease of the metacarpal or metatarsal bones Dr. Macleod has found that when he cut directly down upon the bone, a difficulty was experienced, from want of room, in getting at the diseased part, and even when no such difficulty was experienced, there was apt to be later some trouble in securing satisfactory drainage, for the discharge accumulating in the cavity formed by the removal of the necrosed bone, prevented speedy recovery, if it did not even lead to more serious mischief. In order to get rid of these troubles, Dr. Macleod has been in the habit for some time, in cases of disease of the metacarpal or metatarsal bones, of splitting the hand or foot, that is, of dividing all the structures between two contiguous bones. The results have been quite satisfactory. The operation is easy and speedy, thorough access is got to the seat of disease, and good drainage is secured. With Esmarch's tournequet this method of operating gives special advantages in examining the parts and removing all the disease. The strength of the hand or foot does not appear to be weakened.

TUMOUR OF THE PHARYNX—OPERATION—DEATH.—Mrs. S., aged 53, admitted 22nd January, 1880. She was apparently a strong healthy woman, although her health was not quite so good as it had formerly been. She was, however, of weak fibre—puffy, and her heart was also known to be weak. The small vessels of the face were injected, as though she was the subject of chronic bronchitis. She was admitted on account of a tumour of the pharynx, the history of which is as follows:—About two years ago some defect in her speech was noticed; for this a medical man was consulted, who discovered a growth in her throat, and lanced it, but nothing except pure blood came away. For some time she used a gargle, but her speech gradually becoming worse, and the tumour increasing in size, so as to interfere both with respiration and deglutition, she sought admission to the hospital. The nostrils had always been quite free.

Examination on admission.—Upon opening the mouth and depressing the tongue, a large tumour was seen occupying the back of the throat. It was difficult to make out the extent of its connection or its size, as it passed behind the tongue and down the pharynx. It seemed to grow from the soft palate, and had contracted extensive adhesions to the pharynx on the left side. It was comparatively soft and quite painless. An enlarged gland was felt at the angle of the jaw on the left side, and it, too, though small, was painless and soft, and quite movable.

January 28th.—To-day chloroform was administered and the tumour removed. In order to obtain efficient breathing facilities, tracheotomy was first performed. The next step in the operation was the division of the lower jaw. The central incisor having been extracted, the soft tissues were cut through, and the bone divided at the symphysis with saw and bone forceps. The two sides of the jaw were then drawn asunder, and the tongue pulled well forwards and downwards between them. A sponge was now placed in the larynx to prevent the passage of blood. An incision was made in the mucous membrane over the tumour, and by means of the fingers, it was easily removed. The wound of the mucous membrane was stitched with carbolised catgut, the two sides of the jaw bound firmly together by silver wires passed through two holes drilled in the bone, and finally, the edges of the wound in the soft tissues were brought together with silver sutures. During the operation very little blood was lost. The patient was easily and effectually kept under chloroform, by having it administered in the ordinary way at first, and, after the trachea was opened, by a sponge saturated with chloroform, and held in front of the tube. There was no difficulty whatever with the breathing during the operation. The tracheotomy tube was left in after the operation.

The patient recovered well, suffering from no appreciable shock, and passed a good day. There was no complaint of pain in the throat, and she could swallow and breathe without difficulty. At night she had $\frac{1}{8}$ grain morphia subcutaneously. In the morning, symptoms of congestion of the lungs were detected. The patient was now propped up in bed, and a tent rigged up, so as to confine the air, warmed and moistened by a jet of steam. The tracheotomy tube annoyed her, and she was also troubled with flatulence. On the following morning there seemed some improvement in the condition of the lungs, but during the day she continued getting weaker, and died in the evening, being the second day after the operation. The condition of the parts operated on was thoroughly good quite up to the end.

Dr. Macleod thought that a mistake had been made in this case, in keeping the patient on her back, with a low head, during the first day after the operation; and after she was set up in bed she had not strength enough to rally. It would also, perhaps, have been better, he thought, if the tracheotomy tube had been taken out immediately after the operation, as thereby a source of annoyance to the patient would have been removed, and the possibility prevented of cold air getting access to the lungs, and causing irritation. She swallowed without any difficulty to the end. The tracheotomy tube was removed, at her request, on the morning of the second day.

The tumour was examined by Dr. Joseph Coats, who reports that it is a *round celled sarcoma.* Its main constituents are round cells, about the size of white blood corpuscles. Besides these, there is a small amount of intercellular substance, composed partly of stiff fibres, and partly of a finer reticulum.

— [illegible]

FROM DR. PATTERSON'S WARDS.

TUMOUR OF THE MOUTH—OPERATION—DEATH.—Mrs. M., aged 66, was admitted 5th January, 1880, on account of a large tumour which completely filled up the cavity of the mouth. She was in rather a feeble state of health. The tumour was first noticed about eighteen years ago. At that time it was but a small growth, and was situated on the left side, at the junction of the hard palate with the soft. It increased but slowly in size, so that eight years passed before it reached the tongue. At the date of admission, however, it had attained such a size that its attachment and relation to the contiguous parts could not be clearly made out. She could breathe quite freely by the nostrils; and a long probe, passed by the nostrils to the pharynx, met with no obstruction. She was able to swallow fluids and soft solids. Her voice was very much affected by the tumour, having a muffled, indistinct tone.

14th January.—The tumour was removed this morning. Chloroform was administered in the usual manner, but, from the nature of the operation, some difficulty was experienced in keeping her thoroughly anæsthetised. A strong ligature was passed through the tongue, enabling it to be drawn well forward. An incision was then made through the left cheek, from the angle of the mouth to the ramus of the jaw, so as to give room to operate. The mouth was kept open with a gag. By means of the nail of his forefinger, Dr. Patterson scratched through the capsule of the tumour, and with the finger enucleated it. This part of the operation was both difficult and tedious. A ligature was passed round a small attaching shred, which could scarcely be called a pedicle, and the tumour severed. During the process of enucleation, the tumour, which had softened at one part, broke down slightly, and this facilitated the removal of the remaining solid portion. The cheek was stitched with silver sutures, and the operation concluded. There was very little hæmorrhage.

After the operation, addressing the students, Dr. Patterson said that, from the long duration of the case, he had been of opinion the tumour was a simple one, and from the naked eye appearance of it, now it was removed, his former opinion seemed confirmed. It sprang from the left superior maxilla, at the posterior part of the dental arch. He referred to the small amount of hæmorrhage during the operation, all the blood lost being from the wound of the cheek. In removing the tumour he had used almost exclusively his fingers, scratching through the capsule, and pulling out the tumour. In removing tumours from the neck or axilla, he strongly advocated the same mode of operation. He had not performed tracheotomy, preferring, for the sake of the patient in the after course of the case, to do without it if possible. Arrangements, however, had been made for its instant performance, in the event of the necessity arising.

16th January.—The wound in the cheek has healed by first intention. The mouth is still painful, and she can swallow nothing but milk, and part of it is rejected. Beef-tea enemata with brandy are commenced, as patient is very weak, having never properly rallied from the operation.

18th January.—Patient has not rallied yet; strength failing; brandy in injection doubled.

19th January.—Sinking.

20th January.—Died to-day. The cheek is whole. Stitches removed four days ago. The mouth also in good state, no suppuration whatever having occurred.

Dr. Joseph Coats examined the tumour, and reports that it has the structure of an *Adenoma.* It presents masses of glandular epithelium, arranged very irregularly, sometimes presenting definite tubular ducts with cylindrical epithelium, sometimes irregular acini. The epithelium cells are, as a rule, well developed, but grouped very irregularly. In some parts there is a mucous degeneration of the cells, so that the gland structures are filled with a more or less structureless transparent material. In one part there is great condensation of the tumour, and here a new formation of connective tissue has occurred.

GLASGOW DISPENSARY FOR SKIN DISEASES.

REPORTED BY MR. C. FRED. POLLOCK.

TINEA FAVOSA EPIDERMIDIS, COMMUNICATED FROM MICE.—The chief interest attaching to the following case is due to the fact that it apparently affords an illustration of the propagation of Favus from mice to a child.

M. M., æt. 5, was brought to Dr. M'Call Anderson, at the Glasgow Dispensary for Skin Diseases, Elmbank Street, on 17th November, suffering from an affection of the skin, confined to two spots on the left forearm.

Her mother stated that the child's general health was good in every respect, and had been so for some considerable time; but that, three weeks before seeking advice at the Dispensary, a pimple was noticed on the left forearm, near the wrist. This increased in size, and there formed on the surface of it "a scab," which looked to the mother to be not unlike mildew. The spot was never itchy, nor has it seemed to bother the child in the least. After a fortnight had elapsed, a second spot, similar in all its characters, appeared at a short distance from the first.

Upon examination, only the two spots were found as described, and one of these presented a typical example of favus of the skin. A large piece of the crust was removed, and then the skin was seen to be pitted on the site of the hair follicles, the hollows being occupied by a yellow deposit, which had a rather faint trace of the usual "mousey" smell of favus, and which proved, on submitting it to microscopical examination, to be composed of spores and mycelium of *Achorion Schönleinii.*

No cat or pet animal of any kind is kept in the house where the patient lives; and her parents were quite at a loss to discover any source to which the disease might be traced, as no one with whom the child is likely to have come in contact could be found to have any such affection. On further inquiry, however, it appeared that their house was overrun with mice; and, though the mother had never thought of this as a possible source of contagion, she remembered having observed that one mouse, among the many that had been killed by traps, had something peculiar about its neck, which, she stated, looked somewhat "eaten away" and whitish. She was directed to catch as many mice as possible and bring them with her on her next visit to the Dispensary. This she did, returning on 24th November, and bringing eight mice for inspection. Out of this number, four were affected with favus to a considerable extent, three having it chiefly about the jaws, and one about the ear. While the mother is not aware of her child having ever touched any mice, she says that the traps may have been handled, or that mice may have run about the crib in which the child sleeps, and to which they could readily find access. The inference seems to be obvious that this is the source from which, in all probability, the disease has been derived.

The treatment adopted in this case was:—

(1.) Careful removal of the crusts.
(2.) Epilation.
(3.) Application of the following lotion:—

℞	Hydrargyri Bichloridi	gr. 12.
	Aquæ	℥vi.

Under this treatment patient is making rapid improvement.

MEETINGS OF SOCIETIES.

GLASGOW PATHOLOGICAL AND CLINICAL SOCIETY.

Session 1879–80.

Meeting IV.—10th December, 1879.

Dr. Alexander Robertson, *President, in the Chair.*

Dr. Duncan showed a hydatid mole passed on Dec. 6th. Menstruation ceased in July of this year (1879), the abdomen gradually enlarged, and at the end of 3½ months the woman imagined she felt the movements of the child. The abdomen enlarged very rapidly towards the close of the case. The hydatid came away quite easily. The patient has now, however, a little œdema of the feet, but there is no albumen in the urine, and probably the dropsy is from anæmia.

Dr. Thomas Reid showed a tumour, probably sarcomatous, which he had removed from between the eyelid and the supra-orbital plate.

Dr. Dunlop exhibited some instruments used in the operation of circumcision. He read the following notes:—

"The instruments used in the operation of circumcision which I have to show you are two in number, and regarding them I may here remark that I make no claim of having invented them. I have not even the merit of having improved upon them. The one now shown is in the form of a Jew's harp; it is simply a large size, suitable for an adult, of an instrument which has been in use by the Jewish Rabbi, since the earlier ages of the world. The other is quite a modern instrument, and was made for me in London on the order of Dr. Asher, a gentleman of large experience, who uses that instrument in preference to the other, in the operation of circumcision, as a rite of the Jewish Church. Both instruments I have frequently used not only in hospital, but in private practice, not however in infants as a religious ceremony, but on the many boys and adults in whom there was phymosis due either to contraction of the prepuce and adhesion of the mucous membrane to that of the glans penis, or to the presence of sores the result of venereal infection.

"Besides these instruments I have tried others, such as the thermo-cautery, and have also followed the simple plan of slitting up the prepuce on a director, and I have tried too the method, which is recommended by some of seizing the portion of prepuce to be removed between the blades of an ordinary pair of dressing forceps—and then slicing it off with a sharp bistoury.

"In reference to the need of such an operation as circumcision, I have to remark that cases of phymosis due to the presence of sores and warts are common in hospital practice, and the removal of the swollen and diseased prepuce greatly facilitates the treatment of the sore itself, and frequently cuts short the course of a sloughing phagedena thereby promoting the comfort of the patient, and often saving from destruction a part of an important organ.

"The advantages of the thermo-cautery in circumcision for phymosis due to venereal sores are the following. Bleeding is arrested during the division of the vascular structures, and the burned circular surface which is left does not readily become infected by the venereal poison. The disadvantage of the cautery, however, is, that its use always necessitates the administration of chloroform. The operation could not be so readily performed unless the patient was unconscious of suffering, and in order to be unconscious of the suffering which is induced by the thermo-cautery, the patient requires to be deeply under the influence of the anæsthetic. And I may here remark, as a result of considerable experience, that patients suffering from venereal disease, and about to have an operation performed upon the genital organs, do not bear chloroform well.

"The instrument which I now prefer to use is that of Dr. Asher. The operation can be performed with considerable rapidity, and without the aid of chloroform. In infants who are circumcised by the Jewish physician, there is usually very little bleeding; the vessels are compressed by the instrument, and, from their small size, they readily contract. There is no stitching of the divided parts, and they, as a rule, heal up very readily. In the adult, however, there are always several small arteries to ligature. I do not now use any stitches. I found that they almost invariably set up irritation I content myself with leaving the parts in close apposition, and keeping them clean by repeated washing with tepid water And not unfrequently the parts unite by first intention.

"Before closing my observations I have to remark that I have on several occasions removed the prepuce upon which there was situated an indurated sore of the true Hunterian type. The early removal of this sore did not prevent the evolution of secondary symptoms; that is to say, eruption upon the skin or sore throat, with mucous patches upon the lips, made their appearance in due course, just as if the sore had not been touched. I have also observed that in such cases, when the incision in the prepuce was in sound tissue, wide of the indurated chancre, the wound formed did not assume the characters of a syphilitic sore, but healed up like an ordinary healthy wound. Sometimes, however, when the chancres are not of the Hunterian type, the wound formed by the operation becomes infected by the poison from the sores; and a large circular sore results, which is often very troublesome to the patient and to the surgeon."

DR. CAMERON showed INSTRUMENTS FOR OPERATING IN CASES OF RUPTURED PERINÆUM.—He demonstrated the stitch used by Aveling in the operation for ruptured perinæum, devised by Simon. The great advantage of this operation is that it does away with the deep quilled suture. The description of the operation, with diagrams, will be found in Ziemssen's *Cyclopædia.* It is often found that the ordinary sutures in vesico-vaginal fistula are difficult to remove, and cause a good deal of irritation by the ends getting embedded in the mucous membrane. Aveling avoids all this by running the stitch home by a little coil of wire, through which the ends of the suture are passed, and then he clamps the wire on the distal extremity of the coil with a small lead pellet. This prevents the sharp ends of the suture from causing any irritation, and the stitch can always be easily found and removed with the fingers.

Dr. Foulis had used the needle in cleft palate, and found it very easy of introduction.

DR. COATS showed SPECIMENS OF THREE DISSECTING ANEURISMS removed from the same subject. The first aneurism was in the first portion of the aorta. The aperture was narrow, and in connection with it there was a tear in the internal and middle coats of the aorta. The second aneurism started in the thoracic aorta, and ran down into the abdominal. Its upper part was filled with stratified clot, the lower empty. It had two apertures, the blood passing in at the one and out at the other. The third aneurism was on one of the mesenteric arteries. All the aneurisms were situated in the middle coat of the artery. The middle coat in the femoral and other vessels of the subject was found infiltrated with calcareous matter; and although Dr. Coats did not think the calcareous infiltration the cause of the aneurism, still it showed a congenital vulnerability of the middle coat.

Dr. Gairdner thought this case unique in the number of dissecting aneurisms; and that atheroma had not much to do with their production.

DR. GEO. BUCHANAN showed A CAST OF THE TRACHEA EJECTED THROUGH THE TRACHEOTOMY TUBE. The case was that of a boy, aged 8, and he made a good recovery.

DR. CAMERON showed A SIMILAR CAST, also coughed up; but his case died.

DR. BUCHANAN showed a preparation with a LONG INCISION IN THE ABDOMINAL WALL, IN WHICH THE PERITONEAL EDGES UNITED IN TWENTY-FOUR HOURS.—It was from a case of Cæsarian section, the patient dying in thirty hours. It could not be called healing by immediate union, but rather by glueing together of the two surfaces, which were folded against each other.

GLASGOW SOUTHERN MEDICAL SOCIETY.

SESSION 1879-80.

MEETING III.—29th JANUARY, 1880.

MR. NIVEN, *President, in the Chair.*

DR. CHARLES CAMERON, M.P., delivered an address on ANIMAL VACCINATION, in the course of which he observed that a sharp distinction must be made between animal vaccination, properly so called, and retro-vaccination. The former is vaccination with lymph obtained from the vesicles of genuine cow-pock, a disease which has prevailed in the bovine race from time immemorial; the latter is vaccination with lymph obtained by re-transmitting humanized lymph through the cow. Some object to vaccination on the ground that it is wrong to fight against anything sent as a chastisement for sin, or to introduce animal disease among men; others, because certain diseases have been inoculated by vaccination. The latter difficulty, the inoculation of syphilis, which has been placed beyond doubt by the occurrence of epidemics on a large scale in France, is completely got rid of by animal vaccination, there being no possibility of transmitting syphilis in this way. The Health Department of Government object to it, holding that it is not equally certain in taking power with humanized lymph, but this is denied by all who have had large experience of animal vaccination. It is also stated that, even in successful cases, the number of vesicles to each puncture is not equally great; but this, too, is authoritatively contradicted. The most important question to be decided is regarding the respective efficiency of the two forms of lymph. It seems to be unquestionable that vaccine lymph has degenerated very considerably. As introduced by Jenner, vaccination was an almost absolute protection from small-pox; thus, we find it stated in the report of the Jennerian Society for 1811, that the worst case of post-vaccinal small-pox that had, up till that time, come under their notice was one of confluent small-pox, occurring in the person of the Honourable Robert Grosvenor, and that case ended in recovery. In January, 1817, it was recorded that of 34,369 persons vaccinated at the London Institute, only 4 had taken small-pox. The protective power of vaccination was seen in the greatly diminished susceptibility to small-pox among the vaccinated, and in the smaller death-rate among those who did subsequently contract the disease. It is now found, however, that three-fourths of those who suffer from small-pox are vaccinated persons; and the death-rate in post-vaccinal small-pox has risen. At this point it is interesting to note the relation which exists between small-pox and vaccinia. If they are one and the same disease, the lymph in use should not deteriorate through lapse of time, as, when taken from the heifer to man, it would be placed in its own natural soil; but, if they are different diseases, the lymph might naturally be expected to deteriorate sooner or later. Jenner supposed that the two diseases were identical; and, thirty-five years after him, Seely was led to adopt the same view, by the results he obtained when he inoculated cows with small-pox virus. The latter observed that, in this way, he produced a crop of pustules, and that if from these pustules he vaccinated in the human subject, he produced vesicles exactly like the vaccine vesicle, this eruption being attended by some inflammatory fever. But it was soon noticed that the symptoms thus excited in man were different from those which sometimes accompany ordinary vaccination; these were vomiting, delirium, and often generalised eruption, very like that of small-pox, named by Seely, strophulus volaticus. In performing these experiments, one of his assistants pricked his finger; this was followed by a vesicle locally, and a general eruption. In 1868 it was found by M. Chauveau, a French veterinary surgeon, that whereas cow-pock, or true vaccinia, could be propagated *ad infinitum* in the cow, small-pox could not be so propagated, and that cattle inoculated with small-pox virus had a slight local eruption with no constitutional disturbance, and were subsequently insusceptible of inoculation with vaccinia, or any of the allied diseases. He then took matter from the pustules so produced, and with it inoculated the human subject; this gave rise to a vesicle precisely like the ordinary vaccine vesicle; but, in addition to this, the case afterwards ran the ordinary course of small-pox. All these observations tend to show that cow-pock and small-pox are different diseases. Have we now any evidence that the infective power of humanized lymph has degenerated? (1.) The character of the vaccine vesicle has markedly altered. In the early days of vaccination, the vesicle increased till the tenth day, remained stationary a day or two, and then faded, the scab falling off at the end of the third week, leaving a deep circumscribed cicatrix, which showed that the true skin was involved. Now, the vesicle runs a more rapid course, and is more superficial. Dr. Morton, of Boston, recently vaccinated a number of children with animal vaccine, and found that, as in the days of Jenner, three weeks elapsed before the scab dropped off; in children vaccinated with humanized lymph obtained from England, the whole process was complete in a fortnight; when he used his own lymph, the process lasted three days over the fortnight. (2.) The protection afforded now by vaccination is not what it was in Jenner's days. In Edinburgh, in 1818, the mortality from post-vaccinal small-pox was ·02 per cent; in 1823, ·02; in Edinburgh and London, in 1840, it was 3·1. In Marston's statistics, extending from 1833-39, the death-rate in post-vaccinal small-pox was 6·6;

from 1836-42, 7·5; from 1843-49, 10; in 1851 it fell at once to 6, on removal to a new hospital; from 1870-73, it rose to 10·15, and in the last epidemics, ending in 1879, it was 8·8. The mortality has thus steadily risen. In 8,000 such cases recorded as having occurred, from 1820-23, in Edinburgh, London, France, and Denmark, the mortality was 1 per cent; in the last decade in the London Hospital, it advanced to nine times what it originally was. In Copenhagen there were no deaths from small-pox from 1810-1823; from 1823-27 there were several, ·08 per cent of which were in vaccinated persons; from 1827-35, the mortality ranged from 2·2-4·5. Seaton's statistics show that, in 1873, the mortality in post-vaccinal small-pox rose to 15·2 per cent. (3.) In the early days of vaccination one vesicle was sufficient. It is not so now. (4.) Protection now does not last so long as formerly. From the introduction of vaccination till 1835, not one person under 20 years of age had died of small-pox in Copenhagen; the proportion of post-vaccinal small-pox in children afterwards rose to 3·2 per cent of all the cases; and in Edinburgh, in 1863, it rose to 10 per cent, while, in Marston's statistics, it is 2·3. In 1871, in Edinburgh, 21 per cent of the cases of small-pox occurred in children under 10. As to the mortality of small-pox in children, in 31 cases recorded by Gregory in 1838, there were no deaths; in 268 cases recorded by Marston, from 1836-51, there were 9 deaths, 3·3 per cent; in London, in 1871, there were 262 such cases, and 22 deaths, 8·4 per cent.

Would this state of matters be remedied by animal vaccination? Experience leads us to believe that it would. Of 30,000 vaccinated by Warlomont, in Brussels, with animal lymph, not one had taken small-pox; and of 1,000,000 on whom animal vaccination was practised in New York, by Dr. Martin, not one has taken small-pox.

Dr. Cameron concluded by stating that what he contended for was—That seeing the law of the land makes vaccination compulsory, and, further, that animal vaccination is at least as effective as ordinary vaccination, it is merely common fairness that people should be permitted to choose whatever method they have a predilection for. This, moreover, would cut the ground from under the feet of most of those who are at present agitating against vaccination.

Dr. R. W. Forrest agreed generally with Dr. Cameron, but expressed a fear that there would be some difficulty in keeping up an adequate supply of lymph.

Dr. Dougall was of opinion that re-vaccination would meet most of the objections enumerated by Dr. Cameron. Much depends on the quality of the vesicle produced; he considered no case of vaccination successful that did not present numerous pits on the cicatrix, and felt inclined to regard this pitting of the cicatrix as a good practical measure of the efficacy of any previous vaccination.

Dr. Pearson stated that he was now using the same lymph with which he started seventeen years ago, and that he still found it as active and powerful as ever.

Mr. T. F. Gilmour questioned the value of much of the statistical material brought before the meeting, as no notice was taken of the very different environment of most children at the present time from what it was at the beginning of this century, and pointed to the growth of large cities and the consequently altered manner of life in recent times as powerful factors in modifying the influence and results of vaccination. Formerly only a certain percentage of the population availed themselves of the protection given by vaccination, while now we had to vaccinate all and sundry.

Dr. Lapraik could speak from very considerable experience of the use of animal lymph. He had for a long time been in the habit of renewing his stock at short intervals, and found that his vesicles ran exactly the course described by Dr. Cameron. He was able also, if anything went wrong, to trace back the lymph through the half-dozen or so of children to its starting-point in the heifer, and thus to exclude satisfactorily any possible source of infection. He mentioned also two cases, children in the same family, who were both seized with erysipelas after vaccination; he was now about to vaccinate a third child in the same family and it would be interesting to note whether erysipelas would appear in it too.

Dr. E. Duncan stated that at one time he held that the favourable light in which these early statistics placed vaccination was mainly due to the fact that sufficient time had not been allowed for unfavourable results to show themselves; but he was now inclined to believe, with Dr. Cameron, that our lymph must have deteriorated.

Dr. J. P. Cassells claimed to be the first who had practised animal vaccination in Scotland. In a paper which he had read ten years ago before the Glasgow Medico-Chirurgical Society, he had proved that heifer lymph and humanized lymph are not identical, either in action or in local effect. Heifer lymph, preserved in tubes is unstable; on one occasion he had sent a number of tubes to Bordeaux, but they were detained several weeks on the passage, and were one and all found totally inactive when tried. On another occasion he had sent a parcel to the same town, and these, having been kept only four days on their journey, did perfectly, and from them vaccination was practised with success. Heifer lymph, when passed through the body of even one child, acquires preservability. Repeated transmission through healthy children changes the character of the lymph. Humanized lymph transmitted through even one heifer loses the property of preservability.

The meeting closed with a vote of thanks to Dr. Cameron for his address.

MEDICAL ITEMS.

UNDER THE DIRECTION OF

ALEX. NAPIER, M.D.

The Apex-Beat of the Heart.—The views generally held as to the cause of the heart's impulse fall naturally into two classes—according to the one the impulse depends on movement of the heart in its long diameter, according to the other it is due to change in the shape of the heart. Professor Filehne and Dr. Penzoldt, of the University of Erlangen, advance a new theory, however; they state that the apex of the heart, instead of moving downwards, forwards, and to the left, as is commonly believed, moves upwards, forwards, and to the right during the systole, and downwards and to the left during the diastole. They account for the almost universal adoption of the ordinary explanation of the apex beat of the heart by suggesting that the mistake is due to the difficulty in distinguishing between systole and diastole when the heart is acting rapidly; this difficulty they got over in their experiments (performed on a number of rabbits, guinea-pigs, and dogs), by dividing the vagus and stimulating its peripheral and its central cut ends, which procedure not only rendered the heart's action much slower than usual, and in this way enabled the observers to recognise the first movement which took place after the prolonged pause as the systole, but also arrested breathing and so eliminated the disturbance caused by the movements of respiration. The point they assumed as the apex of the heart was also proved to be such by thrusting in a fine steel needle at the spot lowest and furthest to the left on the visible portion of the heart's surface; the needle was found to have pierced the heart's wall exactly at the apex of the left ventricle. The authors then apply their arguments and experiments to the human subject. They point to a phenomenon which is almost certain to deceive depends on the quality of the vesicle produced; he considered no case of vaccination successful that did not present numerous pits on the cicatrix, and felt inclined to regard this pitting of the cicatrix as a good practical measure of the efficacy of any previous vaccination.

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The treatment of Abortion.—In the *Edinburgh Medical Journal,* February, 1879, there is a paper of great practical value by Dr. Angus Macdonald on this subject. We have the treatment—I. Of threatened abortion. As long as it is possibly preventable there can be no two opinions as to the necessity of rest, recumbency, cool regimen, and opiates; but in such circumstances the writer does not approve of the administration of ergot as a uterine hæmostatic, as has been lately recommended. "Search should be made for hydatids, as myxoma of the chorion is a frequent cause of abortion, and in such cases we ought clearly not to attempt retention of the ovum." II. Abortion unavoidable. The mere amount of hæmorrhage is not to be trusted as evidence of this; a case is recorded in which a sponge tent was introduced into the cervix on account of bleeding, and yet abortion did not take place. But supposing the case to be of this class, if the contractions are tolerably powerful and the bleeding moderate the free administration of ergot, with rest, recumbency, and a cool, non-stimulating diet, are all that is needed. When the ovum is well into the os uteri gentle traction on its presenting point, with pressure on the fundus uteri, may be employed. The plugging of the vagina should not be resorted to unless the bleeding is really serious, and then it must be done *thoroughly.* "Every corner and cranny of the vagina has to be packed with pledgets of cotton-wool or lint, about the size of a walnut each." If the bleeding be kept up by the retention of the ovum, it is advised, should the cervix be sufficiently dilated, to pass the index finger into the uterus in order to make out if the ovum (say at the third month) is entirely separated from its inner surface. If there are adhesions they should be broken up, but if the ovum be separated, external pressure on the fundus will probably enable the index and middle fingers of the examining hand to secure it. If the cervix be not sufficiently dilated, and the hæmorrhage serious, the best practice is to introduce a sponge-tent into the cervix and leave it there for two or three hours. After that proceed as above. III. After-treatment of abortion. "The uterus having been perfectly emptied, and, if thought necessary, disinfected by being washed out with a suitable solution of carbolic acid, the patient should be kept in bed for a week at least." By so doing the risk of sub-involution, chronic metritis, displacements, &c., will be lessened. The paper concludes with the treatment of retained placenta or placental polypus, causing severe or continued hæmorrhage. The cervix should be dilated to admit of the cavity of the uterus being thoroughly explored. Placental remains should be removed with the finger, or if there be only an irregular soft condition of the mucous membrane, then the surface ought to be scraped with a copper curette.—J. W. A.

New method of treatment of Acute Cystitis in Women.—In the numbers of the *St. Louis Courier of Medicine* for May, September, and December, 1879, are found papers on this subject—two by E. C. Gehrung, who first recommended "tamponing the vagina," so as to support the posterior wall of the bladder and prevent the accumulation of urine in the dependent portion. All the cases recorded have been treated by plugging with cotton wool, the result being instant relief and cure in a few days.—G. S. M.

Camphor and Chloral in Maniacal Affections, &c.—Dr. D. B. Simmons states that the syrup-like liquid formed by rubbing up equal parts of chloral and camphor in a mortar, which is commonly used as a local application in neuralgia, possesses very considerable powers as a nervous sedative, which might be made available in acute mania, hydrophobia, tetanus, or delirium tremens. He was led to employ it in this way by observing its effects in a patient, a woman aged 40, who had accidentally swallowed two drachms of the mixture; the symptoms were, a burning sensation in throat and stomach, insensibility within fifteen minutes, slow and feeble pulse, slow respiration, vomiting of blood, passing of coffee-ground stools; at the end of 36 hours the skin was warm and respiration nearly normal, the patient's condition being that simply of *prolonged narcotism*, from which she could be partially aroused to take food and medicine. This lasted for four days, when she awoke; her lucid intervals then became longer and more frequent, till at the end of two weeks recovery was complete. Dr. Simmons' first trial of the above mixture was in a case of periodical mania, in which the attacks usually lasted six days: on the third day 20 drops of camphor and chloral were given, and in half-an-hour the patient was asleep; towards evening, when he awoke, 15 drops caused him to fall into a quiet sleep again, from which he awoke free of the paroxysm. Neither of these drugs, taken singly, would have produced any effect in such a case; some additional strength must, therefore, be developed by their union.—*Amer. Journal of the Med. Sci.* January, 1880.

Benzoate of Soda in Diphtheria.—Dr. A. Kien reports very favourably of this remedy in diphtheria; out of 12 cases treated in this way he lost none. He uses it in the following way:—Children under one year get a tablespoonful every hour of a 5 % solution; children of 1-3 years get a 7-8 % solution; 3-7 years, an 8-10 % solution; above 7 years, a

10-15 % solution. It may be given even to infants at the breast. The inside of the throat should be touched with the salt, or the latter should be blown upon it every three hours, or three times a day in milder cases. Children able to gargle should do so with a 5 % solution. Dr. Kien claims the following advantages for this method of treatment:—Benzoate of soda acts as a true antiseptic; it is easily borne by patients, even when given in such doses as to saturate the system; locally, it has a directly antiseptic effect, dissolving the diphtheritic products without cauterising the parts or producing an eschar under which the development of the micro-organisms might go on; taken internally, it destroys the septic agent, and thus arrests all the disorders to which the latter gives rise in the blood and tissues, the result of which is that the fever rapidly subsides, and the proper performance of the vital functions is resumed.—*Gaz. Méd. de Strasbourg. Bull. Générale de Thérap.* 30th January, 1880.

Sub-Carbonate of Iron in Arsenical Poisoning.—Dr. C. A. Leale, founding his observations on four cases in which very large poisonous doses of arsenic were taken, and on a number of cases of less magnitude, all of which nevertheless recovered, gives the following directions for the treatment of arsenical poisoning:—

1. Quickly remove as much as possible of the poison from the stomach by means of some non-irritating liquid, such as raw eggs with water, oatmeal and water, &c., insisting on the emetic effect being rapidly produced, and if necessary using the stomach pump.

2. As an antidote, give two ounces of the *powdered sub-carbonate of iron*, or common iron rust in fine powder, mixed with sufficient water to allow it to come in contact with the entire mucous membrane of the stomach, that the iron may either absorb or surround by its mechanical affinity all traces of the arsenic. In three or four hours give a free dose of castor oil, which will prevent impaction of the iron in the intestinal canal. Apply artificial heat by means of hot fomentations to the abdomen, and by friction promote capillary circulation; relieve pain by morphia; avoid irritating foods; give emollient drinks.—*Amer. Journal of the Med. Sci.* January, 1880.

Treatment of the Newly-Born Child.—Dr. W. J. Craigen believes that the well known high death-rate among children under five years of age is to a great extent due to the treatment to which the newly-born child is usually subjected, more especially to the great lowering of temperature it experiences on exposure to the air of the bed-chamber, on being washed, &c.; to remedy this he announces a new mode of dealing with the child, according to which it is not for some time washed, dressed, fed, or bandaged, nor is its umbilical cord compressed, —an innovation certainly in the way of obstetric practice. As soon as the child is expelled it is placed on its right side, in a comfortable position for breathing, and kept well under the bed-clothes till the cord ceases to pulsate. The cord should be nicked slowly with a pair of dull scissors, then caught close to the abdomen with the thumb and forefinger of the left hand and stripped with the forefinger and thumb of the right hand to rid it of its blood and gelatinous matter; it is then tied and left dangling. It dries rapidly and drops off in a day and a half to four days. A coating of fresh soft lard is quickly applied to the whole surface of the child, excepting its face, which is to be wiped with a damp cloth. A napkin having been wrapped about the hips, the child is slipped into a loose flannel gown, enveloped in a blanket, and put in some comfortable place. It receives no food except what it can get from the mother's breast. In 24 or 36 hours the infant is washed for the first time, and then dressed as before in napkin and gown; it may be dressed in the ordinary way as soon as the cord drops off.—*Med. and Surg. Reporter.* 3rd January, 1880.

Chlorate of Soda.—Dr. T. Green advocates the substitution of the above salt for the chlorate of potash in diphtheria and throat diseases generally; he states that, though not yet officinal, it possesses properties which make it much more easy of administration, and confer on it considerably greater activity. It is exceedingly soluble, dissolving in a little more than its own weight of water at 20° C., while, at the same temperature, the potash salt requires for solution sixteen times its own weight of water. It is thus more easily given in small doses of the vehicle to children, and it is more rapidly absorbed into the system. The system seems also to tolerate the soda compounds longer and better than those of potash. Dr. Green uses it externally as a wash to the surface in scarlet fever, and in conjunctivitis, acute ophthalmia tarsi, purulent ophthalmia, &c., employing a solution of 4 grams. to 500 c.c. of water; in erysipelas he applies a solution of double this strength to the surface.—*Med. and Surg. Reporter.* 17th January, 1880.

Iodide of Potassium and Calomel in Ocular Therapeutics.—Dr. W. Schlæfke directs attention (in *Arch. f. Ophthal.* xxv: 2) to the danger of dusting the eye with calomel while the patient is taking iodide of potassium internally. He shows (1.) that the latter drug enters the circulation and penetrates to every part of the system with great rapidity; its presence in the various secretions, more particularly in the tears, may be demonstrated in a few minutes after administration. (2.) That when iodide of potassium is being taken, even if only to the extent of seven or eight grains twice daily, it is constantly present in the tears in demonstrable quantity. (3.) That calomel, though only very sparingly soluble in water, dissolves ten times more freely in a $\frac{3}{4}$ per cent solution of common salt. (4.) That calomel, when dusted on the conjunctiva, is dissolved to some extent, and unchanged, in the lachrymal secretion, and then acts as a chemical agent. (5.) That when calomel comes into contact with tears containing iodide of potassium in solution, iodate and iodide of mercury are formed. (6.) That both of these substances are soluble in the presence of iodide of potassium or common salt, and that when so dissolved they have a powerful caustic effect on the conjunctiva and excite violent inflammation therein. (7.) That for the foregoing reasons the external use of calomel should be avoided so long as the tears show traces of the presence of iodide of potassium.—*Centralblatt f. d. Med. Wissensch.* 31st January, 1880.

Ethyl Bromide, or Hydrobromic Ether: a New Anæsthetic.—This agent, the latest claimant of public favour as an anæsthetic, was first introduced into professional notice by Dr. Turnbull, of Philadelphia, and seems to be gaining some reputation among the surgeons of that city. Dr. G. F. Gowers gives here some short notes of fifteen cases operated on under its influence, and, judging from these, its general effects may be stated as follows:—As a rule, moderate acceleration of pulse and respiration; slight excitement or talking, seldom any struggling; flushing of face; dilatation, sometimes preceded by contraction of pupil; diaphoresis, occasionally profuse; complete anæsthesia in two to three minutes; recovery of consciousness in *one to two* minutes after withdrawal of anæsthetic; no after vomiting. The quantity used in these fifteen cases varied from 3 to 11 drachms; in the latter case, the operation, amputation of thigh, lasted forty minutes. In no instance, as yet, have dangerous symptoms presented themselves. The advantages claimed for ethyl bromide are:—

1. Safety, so far as any anæsthetic is safe.
2. Promptitude of action; in this respect it excels ether.
3. Smallness of quantity required to produce anæsthesia; 2 drachms will, in one to three minutes, produce anæsthesia as profound as that produced by an ounce of ether.
4. Slightness of action on respiration and circulation.
5. Rapidity with which consciousness returns when anæsthetic is withdrawn.
6. Absence of depression or inclination to vomit after its use.
7. Pleasantness of odour.
8. Non-inflammability.

Dr. Gowers gives the following directions for its administration:—"A small napkin should be folded and pinned to a folded towel that covers the patient's face; on the napkin two *measured* drachms of the bromide should be poured, and the patient directed to take long, deep inspirations, or what is better, to make prolonged and forced expirations; in two minutes from the time of administration of the first two drachms, a second drachm should be given, and this should be repeated at intervals of two minutes."—*Med. and Surg. Reporter.* 31st January, 1880.

Corrosive Sublimate Hypodermically in the Treatment of Syphilis.—In the *Memorabilien*, 9th July, 1879, Dr. G. Matthès recommends a solution consisting of 1 part of the sublimate to 2 of chloride of sodium, in 100 of distilled water, for hypodermic injection in syphilis. A Pravaz' syringeful of this fluid may be injected into the gluteal region every second day. This solution is almost perfectly unirritating; in 35 cases in which Dr. M had made about 850 injections, it in no instance caused any inconvenience. In general, 20-30 injections are sufficient to effect a cure.—*Bull. Générale de Thérap.* 15th January, 1880.

Ollier's Resection Saw.—M. Ollier brought under the notice of the Académie de Chirurgie de Paris, a new resection saw invented by him. It consists essentially of a small circular saw set in motion by a large fly-wheel, to which it is attached by a continuous caoutchouc band. The saw is held in a substantial wooden handle, which is grasped with both hands; when traction is made on the elastic band, the blade of the saw revolves with great rapidity, and when pressed against the bone to be divided, it cuts with the utmost ease and nicety in every direction.—*Bull. Générale de Thérap.* 30th January, 1880.

On the Treatment of the Pedicle in Ovariotomy.—Dr. Heywood Smith has collected statistics in connection with this subject, but has found great difficulty in classifying the cases, from want of precise information. He shows that, with our present knowledge, the only methods worthy of consideration are those of the clamp, the cautery, and the ligature; and that, with antiseptic precautions, one or other of the two latter is to be preferred. He thinks Thornton's results with the ligature equal Keith's with the cautery.

The following points are strongly commended to the attention of ovariotomists:—"(1.) That no operation for ovariotomy be performed otherwise than antiseptically. (2.) That operators be careful to classify their cases with regard to the existence or non-existence of adhesions and their amount, with regard to the length and thickness of the pedicle, and with regard to the presence of malignancy of dermoid or suppurating cysts, or of peritonitis; and that all cases of removal of both ovaries, and of ovariotomy during pregnancy, be placed in separate classes. (3.) That operators arrange their cases in series of progression, noting the improvements in their method of operating, as experience is gained."—*Obstet. Journal.* November, 1879.—W. L. R.

On the Treatment of the Pedicle in Ovariotomy.—Dr. Thomas Savage, of Birmingham, records six cases of removal of the uterus, for fibroid tumours, by antiseptic gastrotomy. He had one death out of the six operations. In it there was no evidence of peritonitis, but a clot was found in the pulmonary artery. The clamp was applied to the stump of the uterus in three cases, and in the other three it was secured by ligature, and dropped into the abdomen. The fatal case was one of those treated by ligature. Dr. Savage, however, still thinks most highly of the ligature.—*Obstet. Journal.* December, 1879.—W. L. R.

~~The value of the~~ Hodge Pessary in Retroflexions and Versions of the Uterus.—Dr. E. H. Trenholme of Montreal recommends steady perseverance with the various forms of the Hodge in order to the cure of the above mentioned diseases. He has no confidence in intra-uterine stem pessaries. The influence of posture is much insisted on. He advises the introduction of the pessary while the patient is on her elbows and knees, and after the organ has been replaced with the sound. Barne's dictum, that the pessary should never have any support but that afforded by the vaginal walls he considers quite opposed to experience, and he makes great use of the floor of the pelvis for supporting his pessaries. The conclusions to which he comes are as follows:—"1. I believe we possess in the Hodge pessary (variously modified) an efficient and most admirable instrument for sustaining a retrodislocated uterus, and that, too, to any desired elevation in the pelvis. 2. That even a large pessary, filling and distending the vagina and taking pressure on the floor of the pelvis, can be worn with comfort and ultimately curative results, by the proper use of the postural treatment, together with the inflation of the vagina by elevating the floor of the pelvis while in that position. 3. The curative forces operating upon the uterus are resultants of (*a*) the elevating power of the pessary; (*b*) the resisting force of the sacrum; (*c*) the weight of the uterus, now so high up as to gravitate forwards and downwards; and (*d*) the pressure of the abdominal viscera. 4. That the vices of flexion and position being overcome, a permanent recovery may be looked for with certainty in from six months to a year from commencement of treatment.—*Obst. Journal.* December, 1879.—~~W. L. R.~~ Glasgow Med. Journal

New method of examining for Lung Tissue in the Sputa.—Matthias Duval adds to the sputum a little caustic soda, in order to clear up the mucus, then a drop of a solution of fuchsine; all the elements are instantly dyed a beautiful pink. If now the mass is washed and beaten up with a weak solution of acetic acid, the colour fades and disappears in everything except the elastic fibres.—*St. Louis Courier of Medicine,* November, 1879.—G. S. M.

Salicylate of Soda in Intermittent Fever in Children.—Dr. J. Zielewicz has extensive experience of this remedy in intermittent fever, and thus concludes an exhaustive paper on the subject:—1. Every case of intermittent fever is curable by salicylate of soda. 2. The remedy must be given during the attack of fever. 3. The quantities necessary to destroy the malarial contagium are sometimes considerable; it is therefore advisable to employ large doses from the very first. 4. Disagreeable consequences seldom result from this method of treatment, as the drug shows little or no tendency to produce cumulative effects in children. 5. Quinine is considerably inferior to salicylate of soda in rapidity and certainty of action, and is, moreover, much more costly.—*Deutsche Med. Wochenschrift. October, 1879.*—W. G. D.

Transmission of Hydrophobia from Man to the Rabbit.—M. Maurice Raynaud, having a case of hydrophobia from the bite of a dog under his care, inoculated rabbits with the blood and with the the saliva of his patient. Inoculation with the blood gave simply negative results. Inoculation with the saliva was followed in four days by well marked, fatal rabies. The rabbit, in the latter case, was examined thirty-six hours after death, and the two submaxillary glands were removed; two other rabbits were inoculated, the one from the left gland, the other from the right, and both in a few days died rabid. These facts prove—that the saliva of a man suffering from hydrophobia will communicate the disease to the rabbit; and that the salivary glands of the rabbit preserve their virulent properties at least thirty-six hours after death. —*La France Médicale*, No. 89, 1879.—G. S. M.

On the absorption-capability of Granulating Surfaces.—With reference to this subject, Prof. Maas instituted experiments to investigate whether and in what manner chemical substances are absorbed by a granulating surface; whether the different forms of application have any influence upon it; and whether the absorption-capability of wounds is altered by the different methods of wound treatment. Several hundreds of experiments were made, partly on dogs, partly on men; the substances chosen were either those whose chemical reaction is easily demonstrated (ferrocyanuret, &c.), or those whose absorption manifested itself by their physiological action (atropia, &c.) The results were that from watery solutions absorption was as fast as from subcutaneous injection, from powders faster than from ointments and oily solutions, and from alcoholic solutions slowest of all. Eschars produced by the actual cautery, lunar caustic, or nitric acid, do not alter the absorption to any extent, while, after cauterization with carbolic solution, all substances are rapidly absorbed. The only quite impenetrable eschar is that produced by chloride of zinc. It is interesting to note that if a fresh wound is allowed to remain open, a dry eschar forms, which after six hours is quite impenetrable to noxious agents, while if the wound is first treated by wet applications, and then allowed to remain open, the eschar requires a much longer time to become impenetrable. The highest degree of absorption-capability is shown in wounds treated by Lister's antiseptic method, and this remains until cicatrization is complete.—*Wiener Klin. Wochenschrift*, No. 24, June, 1879.—*St. Louis Courier of Medicine*, August, 1879.

Books, Pamphlets, &c., Received.

Headaches: their Nature, Causes, and Treatment. By William Henry Day, M.D. Third edition. London: J. & A. Churchill. 1880.

Students' Primer on the Urine. By J. Travis Whittaker, M.D. With illustrations etched by him upon copper. London: J. & A. Churchill. 1880.

Pseudo-hypertrophic Muscular Paralysis: a Clinical Lecture. By W. R. Gowers, M.D. London: J. & A. Churchill. 1880.

Cancer of the Rectum: its Pathology, Diagnosis, and Treatment, including a portion of the Jacksonian Prize Essay for 1876. By W. Harrison Cripps, F.R.C.S. London: J. & A. Churchill. 1880.

Observations on Fatty Heart: an Essay. By Henry Kennedy, A.B., M.B. Dublin: Fannin & Co. 1880.

Pharmacology and Therapeutics; or, Medicine Past and Present. The Goulstonian Lectures delivered before the Royal College of Physicians in 1877. By T. Lauder Brunton, M.D., F.R.S. London: Macmillan & Co. 1880.

Studies in Life: Lectures delivered in the Lecture Hall of the Young Men's Christian Association, London. By H. Sinclair Paterson, M.D. London: Hodder & Stoughton. 1880.

Aids to Physiology: specially designed for students preparing for examination. Part II (double part). The Vegetable and Animal Substances. By C. E. Armand Semple, B.A., M.B., Cantab. London: Baillière, Tindall & Cox. 1880.

Chirurgie Antiseptique, Principes, Modes d'Application et Résultats du Pansement de Lister. Par le Dr. Just Lucas-Championnière. Deuxième édition. Complètement refondue avec 15 figures dans le texte. Paris: Librairie J. B. Baillière et Fils. 1880.

A Handbook of Therapeutics. By Sydney Ringer, M.D. Eighth edition. London: H. K. Lewis. 1880.

A Note-Book of Solubilities, arranged chiefly for the use of Prescribers and Dispensers. By John Eagle, member of the Pharmaceutical Society. London: H. K. Lewis. 1880.

Some Teachings of Development; being the substance of the last two of a series of Twelve Lectures on Animal Development, delivered at the Royal Institution. By Edward Albert Schäfer, F.R.S. London: H. K. Lewis. 1880.

Fig.1

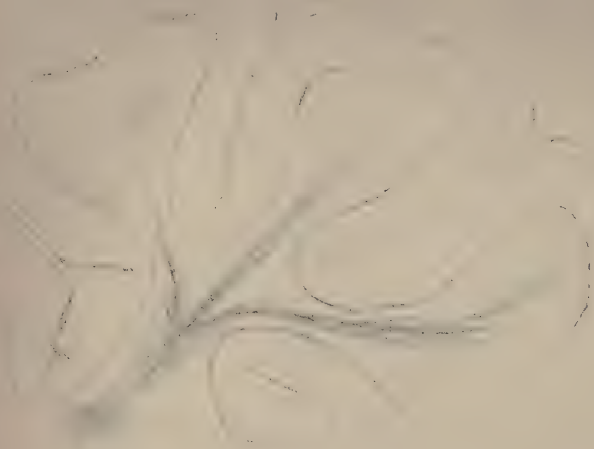

Fig 3.

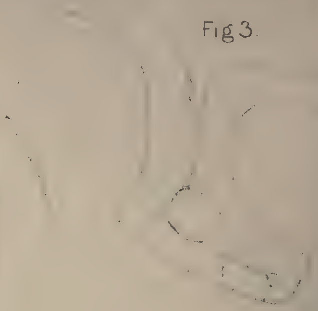

Fig. 2

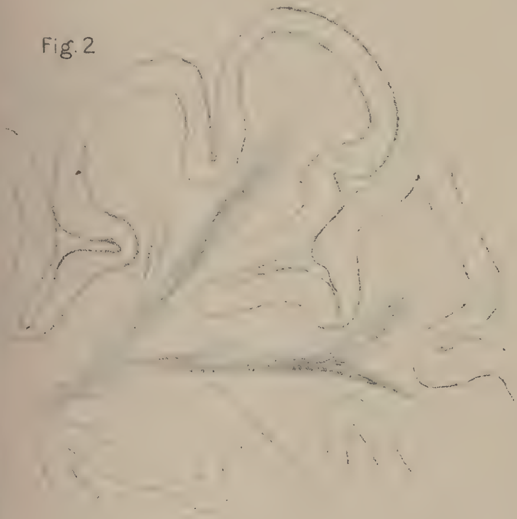

Fig. 4.

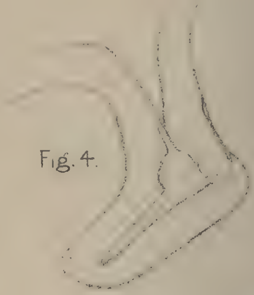

Fig. 6.

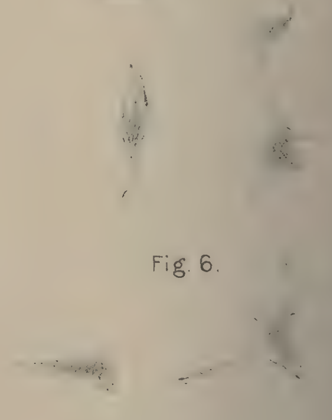

Fig. 5.

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ORIGINAL ARTICLES.

ON THE CLIMATIC TREATMENT OF CONSUMPTION, WITH SPECIAL REFERENCE TO A VISIT TO DAVOS PLATZ.

By Dr. M'CALL ANDERSON,
Professor of Clinical Medicine, University of Glasgow.

(Read before the Medico-Chirurgical Society of Glasgow, 12th December, 1879.)

It is generally admitted that, in chronic pulmonary phthisis, a change of climate often constitutes a most important part of the treatment, especially during the months of winter and of spring. And although a residence in the sunny south is often beneficial by allowing patients to be much in the open air, and by guarding them against great and sudden atmospheric changes, still it must be admitted that the balance of opinion is in favour either of long sea voyages, under suitable conditions, or of a residence at high altitudes. The latter has long been recommended by physicians in America and on the Continent of Europe, but it is only now beginning to be discussed seriously by the profession in this country.

Having during the past summer paid a visit to Davos Platz, the most famous of Alpine health resorts, I propose giving a few particulars of the locality, and my opinion of its value in the treatment of consumption.

The actual travelling between Glasgow and Davos, irrespective of journeyings to and from railway stations, and haltings by the way, occupies forty-three hours,* so that the invalid can easily accomplish the journey in about a week, and at a cost of from £8 to £12 in all, according to the mode of travelling. The cost of living there varies from six to ten francs a day.

For ten or twelve years it has been a favourite health resort with Germans labouring under pulmonary complaints, but it is only within the last four years that it has been frequented by our own countrymen in search of health, and now it is gaining rapidly in popularity, so much so, indeed, that there is a fear, which has already in a measure been verified, that many unsuitable cases may be sent there. In the winter of 1875 there were only about 6 English patients in Davos; in 1876, 16 to 18; in 1877, 36; and in 1878, about 200; and it is thought probable that this winter there will be close upon 350. "The first two patients," says a recent writer,† "of which the place can boast, were happy in their choice, when they selected Davos, some dozen years ago, as the spot to test on their persons the then still debated system of treating consumption by a residence in high Alpine air. One of them was a German medical man of experience, who arrived with good diplomas in his pocket, but a very bad lung under his waistcoat. He was accompanied by a young friend of pleasing but effeminate exterior, whose face, guiltless of the capillary appendages usual to the masculine countenance, gave rise to the belief in the minds of the then unsophisticated peasantry that he was a Polish princess in disguise; and the uncomfortable result was that the door of the one modest hostelry was for long closed against the pair on that wintry afternoon. Notwithstanding this inauspicious reception, the German physician and his supposed lady-love regained health rapidly, and when they showed themselves again in Germany, were admirable living advertisements both of the system and the place."

Davos is 5,200 feet above the level of the sea, and is very prettily situated in a valley of considerable breadth, which runs N.N.W. and S.S.E., so that the sun shines upon it for many hours even on the shortest winter day: its soil is dry, and the air is still, for, except towards the S.E., it is sheltered by high mountains in every direction, while of course it is highly rarefied, being nearly one-fifth lighter than it is at the level of the sea. The ground is covered from November to March with snow, which is crisp and hard, and does not melt under the influence of the hottest sun, unless the Föhn, or generalized south-west wind, makes its appearance, a comparatively rare phenomenon, fortunately, for it is very depressing, and apt to prove injurious to patients.

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* Glasgow to London, 10 hours; London to Paris, 10 hours; Paris to Basle, 10¼ hours; Basle to Zurich, 2¼ hours; (*a*) Zurich to Landquart, 3¾ hours; Landquart to Davos Platz (by diligence through the Prätigau), 7 hours. (*b*) Or Zurich to Coire, 4¼ hours; and thence by diligence through the Landwasser Thal, in 8½ hours.

† *Davos Platz; a New Alpine Resort for Sick and Sound, in Summer and Winter.* By One who Knows it Well. London: Edward Stanford, 55 Charing Cross, S.W. 1878.

The solar radiation is intense, although the air itself is cool and refreshing: this is illustrated by the fact that the temperature in the shade may be below the freezing point, while Casella's black bulb vacuum thermometer may register 130° F. in the sun, so that the snow does not melt upon the ground. In winter, the solar radiation may be such that the thermometer may register even 165° F., but at night the temperature may fall very low, even some degrees below zero. When I was there, in September, the temperature in the shade was 44° F., while, in the sun, the black bulb thermometer registered 120° F., and one could walk with comfort and with pleasure. "To sum up," says Dr. Williams, "Davos . . . has a winter climate of which the characteristic is a still, cold, and dry, rarefied atmosphere, easily permeable to the full effects of the solar radiation." *

The first person who addressed me on my arrival was an active, healthy looking man of middle age, and who was afterwards described to me as being now "a very powerful man." He came from the north of Germany about six years ago, labouring under phthisis, from which he has completely recovered, and is now manager of one of the principal hotels, which, as most of us are aware, is no sinecure. On sitting down to dinner the same evening, I found opposite me a German gentleman, with whom I entered into conversation. He also has resided at Davos for the greater part of six years. When he arrived he was suffering from hæmorrhagic phthisis, and now he is strong and well; and, as he finds himself in better health there than anywhere else, he intends making it his home, and occupying himself as a teacher of languages. He is in the open air, he told me, the whole of the twenty-four hours, as he sleeps with his window open both in summer and winter. The day following, I was introduced to a lady of middle age, active, energetic, and full of spirits, and who was just upon the point of starting for a pic-nic a good many miles away, which she herself had organised. She took up her

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* *The Lancet*, 9th August, 1879.

abode at Davos about four years ago, and hers was a "bad case of phthisis;" yet in two years she was well, but she seems to enjoy the place, and to feel better there than elsewhere, so that she has taken up her abode there permanently, although she leaves it for three or four months in summer, going to Geneva, Aix-les-Bains, or Paris.

Many other instances of a similar nature were met with, but it is unnecessary to refer to them individually. I therefore pass on to speak of a few of the cases which I had the opportunity of examining for myself, along with my friend, Dr. Ruedi, and which were taken pretty much at random, except in so far as they illustrated the effects of a residence at Davos for different periods of time.

The first was a young lady, whom I saw in the neighbourhood of Glasgow, in consultation with her medical attendant, in the month of July. She was then suffering under chronic phthisis of fully a year's duration, without marked general symptoms, but with consolidation of the whole of the left lung, especially at the apex and base, in both of which localities, but especially at the base, moist râles were very distinct. I examined her, with Dr. Ruedi, who agreed with us in thinking her case peculiarly well suited for the locality, and found her rather better than on the former occasion, in so far as the moist râles had in great measure disappeared from the apex. She was none the worse for the journey—indeed, she felt rather better than when she started, and I mention her case only to show that patients may travel to Davos without any bad effects following.*

The next patient was a clergyman, 29 years of age, from one of the midland counties of England, who, as the result of overwork, contracted phthisis in the winter of 1876-7, and who has had slight hæmoptysis on four occasions since. He took a voyage to Australia in 1877-78, and last year wintered at Arcachon and Biarritz, but without any material benefit. He felt so ill when about to leave home, that he had grave doubts as to the propriety of starting. On his arrival on the 23rd of August last, he was so weak, and had so much dyspnœa as to be unable to walk. His cough, also, was very distressing, with abundant purulent nummular expectoration; his digestive organs were weak, although his appetite was fair. He was feverish; temperature, 101° Fahr.; had night sweats; was much emaciated, and very depressed in spirits; weight 109 Swiss pounds; pulse, 96; measurements of chest—right side, 40 centimetres; left, 43. The two upper lobes of the right lung were dull, with bronchial breathing and moist râles. The left apex was also consolidated, though in a less degree, and was likewise the seat of moist râles.

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* Dr. Ruedi's Report of Miss M.'s case, dated 1st December, 1879:—

"Is doing very well. Pulse, 88. Respirations, 14. Temperature, 36°·7 C. Circumference of the chest, 78 centimetres (2 more than at first). Weight, 120 Swiss pounds (5 pounds more than at first). Particularly the lower part of left lung much dryer, with very few moist râles, and hardly dull. But during the month of November a new feature has appeared, which must be considered. A small cavity set in in the left apex, without any fever or any pulmonary symptoms whatever. The cough is diminished, as well as the expectoration, though not very much. I regard the cavity as a sign of healing, because in a diseased apex, with adhesions all round, the formation of a cavity certainly can be produced by contraction of the connective tissue in the infiltrated parts: that there is no sign of new mischief the absence of fever, the general health, and increase of weight demonstrate."

When I examined him on the 25th September, a month after his arrival, the dulness at the left apex was less pronounced, and the moist râles almost gone from that part. On the right side, too, the râles had greatly diminished, and at times none at all could be heard. Measurements of chest—right side, 42; left, 43; being a gain of 2 centimetres on the right side. Pulse 82. He told me that he thought he was gaining weight, that his digestion was much improved, and that the night sweats had disappeared. There was no fever; the cough had much moderated; the expectoration was one third less; the dyspnœa was so far gone that he had no inconvenience from it, and could walk four miles easily at a good pace. He felt much stronger, his spirits were excellent, and he was satisfied that the place had suited him better than any other which he had previously visited.*

A builder, a married man, 59 years of age, of phlegmatic constitution and strongly made, who had always previously enjoyed good health, and whose family history was good, caught cold in the winter of 1875, and since then he has never been free from cough. In 1876 he was operated upon for fistula. During the winter of 1877-78 he had a little hæmoptysis, became hoarse, and could hardly speak above a whisper till the July following. The pulmonary symptoms having continued throughout the winter of 1878-79, he was recommended to go to Davos, where he arrived on the 25th of June. He then had much cough, especially at night, with heavy expectoration and shortness of breath. His weight was 124 Swiss pounds, being 14 pounds less than before his illness commenced. His bowels were habitually costive, but his digestion otherwise was pretty fair. Circumference of chest 85 centimetres; 44 on the right side, 41 on the left. At the right apex there was some dulness with crepitation. On the left side moist râles were very distinct at the base, while the whole of the upper lobe was very dull, with hardly any normal breath sounds, and there were the usual signs of a large cavity, with metallic sounds under the clavicle.

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* Dr. Ruedi's Report of Mr. C.'s case, dated 1st December, 1879.—"Is going on very nicely. General health good; cough and expectoration further diminished. But in consequence of contraction of the upper part of the right lung vicarious emphysema is becoming developed at the right base posteriorly. The circumference of the chest is two centimetres greater than at the date of your examination, and he has gained 6 lbs. in weight."

When I examined him on the 24th September, about three months after his arrival, there was still slight dulness at the right apex, but the crepitation was gone. On the left side the moist râles at the base had almost disappeared: in the upper lobe occasional moist râles were still to be detected, and the signs of excavation were still present, although the cavity was rapidly contracting, as shown by the lowering of the apex, the flattening of the chest wall over it, and the elevation of the apex of the heart to the level of the nipple, signs which were absent on his arrival. Circumference of chest 87 centimetres; on the right side 44; on the left 43; being a gain of 2 centimetres on that side. His cough was comparatively slight, and absent at night, the expectoration and dyspnœa were about one-third less he thought; his digestion was perfect, and his bowels quite regular, while he had gained 5 pounds in weight.

One more case will suffice, that of a young gentleman, 20 years of age, who had no hereditary tendency to consumption, and no previous illnesses, but who had sadly overworked himself, and whose illness commenced in the winter of 1876. On his first arrival at Davos on the 1st August, 1878, there were the usual signs of infiltration of the whole of the left lung, with very extensive moist râles, and a large cavity was detected at the lower part of the upper lobe. On the right side there was absence of good breath sound, with crepitation at the apex. Circumference of chest 76 centimetres; 39 on the right side, 37 on the left. He had a violent cough, with much purulent and nummular expectoration, great dyspnœa, night sweats, and fever (temp. 103·2° Fahr. at night, 101·5° in the morning.) His digestion was pretty good, and appetite fair. He weighed 113½ Swiss pounds.

He remained at Davos till 14th February, 1879, during which time he gained 19 pounds, and improved so much that he insisted upon going home, from which, however, he returned on the 21st of June, having lost 13 pounds, and having suffered much in health in the interval.

I examined him on the 24th of September, when I found that the moist râles had disappeared from the lower part of the left lung: the cavity in the upper lobe was still present, though much contracted, and the moist râles were much less abundant. The crepitation had disappeared from the right apex. Circumference of chest 80 centimetres; 41 on the right side and 39 on the left, being a gain of 2 centimetres on each side. His digestion was much improved, and fever and night sweats were absent. The cough and expectoration were slight, and the dyspnœa no longer complained of, indeed the day before I saw him he had walked 18 miles, including an ascent of 2,500 feet.

The class of cases likely to be benefited by a residence at Davos may now be mentioned. Of course, no one would think of recommending those whose symptoms are at all acute in character to leave home; and cases complicated with organic disease of the circulatory or nervous systems are unsuitable, the place being too intensely stimulating for such persons. It is likewise contra-indicated where a very large amount of lung tissue is involved, or when the disease occurs as a complication of bronchitis with emphysema; for, in this highly rarefied atmosphere, there is not a sufficiency of lung surface to ærate the blood, and such patients run the risk of being suffocated. The cases, in fact, which are most certain to do well are pretty much those which are most likely to improve elsewhere—namely, non-hereditary, uncomplicated cases of chronic phthisis, in which the extent of lung tissue involved is not excessive, with this proviso, however, that, while the prognosis of phthisis with pronounced stomach symptoms is not good at home, these are the very cases which should be sent to Davos, for there the appetite usually improves rapidly, and the digestive organs soon resume their normal vigour. It is a mistake to suppose, as some have done, that a tendency to hæmoptysis constitutes a contra-indication; and those who are interested in this point will find in the *Lancet*, for the 9th August, 1879, a very good illustration to the contrary, from the pen of Dr. Williams. Finally, laryngeal phthisis is only a little less likely to terminate unfavourably at Davos than at home.

It is pretty generally stated that patients must, of necessity, leave the place in the month of April, when the snow is melting. This, however, is not the case; indeed, they are less likely to suffer there than in other localities during this, the most trying season of the year; but in May and June it is advisable for them to have a change, not on account of the climate, but because they are apt to become *ennuyé* and are likely to be benefited by a change of scene, and of diet and regimen for a time. Hence, they are recommended to visit such places as Baden-Baden, Heidelberg, or Paris, and later on, if they feel disposed, they may return to England. The months of December, January, and February are those during which patients at Davos are most certain to be benefited, and if they do not improve then, and if there is no sufficient cause to account for it, their future prospects are far from bright.

There is much difference of opinion as to the cause of the benefit derived by consumptives from a residence at Davos, but there are good grounds for believing that it is due to a combination of causes. In the first rank must be placed its elevation, with, as a consequence, its rarefied atmosphere, its bracing coolness, and its purity and antiseptic qualities. It is a mistake, however, to suppose that the inhabitants of elevated regions enjoy a complete immunity from phthisis ; indeed, even at Davos, although it is very exceptional, Dr. Ruedi has seen five or six cases within the last few years, but these he could generally trace to errors of diet and hygiene. One case in particular, he mentioned, that of a young man who contracted the disease from living in a filthy, badly ventilated, and damp apartment, in which fungi were growing in profusion between his bed and the wall ; but a few weeks after his removal to a more wholesome dwelling, the consolidation at the apices of his lungs had entirely disappeared, and he was completely restored to health.

Its virtues are likewise to be attributed, in part, to the intensity of the solar radiation, and to the dryness and stillness of the air ; and if to this we add that the accommodation for patients is good, the sanitary arrangements excellent, the diet wholesome and nutritious, and the mode of living of the invalids (who are in the open air the greater part of the day, even in the depth of winter), carefully supervised by excellent medical men, we recognise a wonderful combination of beneficial influences, which our common sense tells us must yield good results, and which makes us cease to wonder that, year by year, increasing numbers of sufferers from consumption should hie to it in search of health.

ON THE TREATMENT OF STRICTURE OF THE URETHRA.

BY EBEN. WATSON, M.A., M.D.,
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(*Read before the Medico-Chirurgical Society of Glasgow, 5th March, 1880.*)

The importance of the subject of stricture of the urethra, in a surgical point of view, is generally acknowledged, and the occurrence of cases of that lesion in surgical practice is sufficiently frequent; yet it has often surprised me that, in my recollection, no Glasgow surgeon has grappled with the subject, or recorded his experience in this part of his work. But, when lately at the Southern Medical Society, I myself endeavoured to give an address, which was no doubt unwritten, and, in great measure, *ex tempore*, on the treatment of stricture, I think I discovered, at least, one of the causes of the avoidance of the subject by others—viz., the great difficulty of expressing oneself on it, with sufficient simplicity and distinctness, to be easily followed or thoroughly understood. So much has been written on it, so many suggestions have been made in regard to it, and the very cases, though apparently similar, are, in reality, so different from one another, that one finds too many things crowding in on his mind at once, and he has to make too many reservations and restrictions as to his opinions to be quite free from some degree of confusion in statement; and he therefore lays himself open to misapprehension. For such reasons as these I felt dissatisfied with the manner in which I had expounded this subject before the Southern Society, and determined to write a paper on it, with as much care as I could, in which I should state my views more distinctly, and with greater accuracy. Hence the present communication to the Medico-Chirurgical Society, for which I now beg the patient attention of the members present.

It is well known to the members of this Society that Strictures of the Urethra may result from either of two causes—viz., from injury, when they are called traumatic, or from disease, when they are usually, though not very accurately, called organic strictures.

With regard to the former, I shall only here remark that they generally present themselves to the surgeon, not as strictures, properly speaking, but as cases of extravasation of urine, requiring immediate and free incisions, as well as the longitudinal division of the wounded part of the urethra; by which practice contraction of the tube is generally prevented. The practice in such cases is quite settled, and needs no further remark. It is only in a few rare instances that the lesion becomes chronic. The patient has escaped his primary danger with a urinary abscess, which has burst or been opened as an abscess, and a urinary fistula with a contracted urethra remains behind. These are the only cases worthy to be called traumatic strictures.

Organic strictures, from disease, have been variously divided according to their pathology; but, so far as I have been able to judge, in all cases, the contraction of the urethra has been due to one of two causes—viz., either the cicatrisation of an ulcer, or the deposit of lymph around the mucous membrane of the urethra. Strictures from the former cause are comparatively slight, and easily dealt with, because they occur at or very near to the external meatus, and they are, from their very nature, of no great extent. They are truly bridle strictures, and may be incised if troublesome, or the patient may keep them dilated by the frequent insertion of a bougie for a short way up the passage.

But it is very different with strictures caused by lymph deposit. In such cases, the seat of the stricture is generally near the bulb of the urethra, and consists of a mass of organisable material, the tendency of which is to close up the calibre of the tube. There is also a continual tendency to increased or renewed deposit of this lymph, which, in some cases, may be felt as a long shaped tumour, hard and unyielding, along the whole median line of the perineum. I do not doubt, for I know it is true, that this deposit varies in length in different cases, but I have not known any such case which could be called a "bridle" stricture. They have all been "ribbon" strictures of greater or less breadth. This ribbon of lymph, however, does not by any means always completely surround the urethra. It often occupies only one side of the tube, and encroaches on its calibre in a nodular form; and again, it may be remarked that several distinct deposits or ribbons of lymph may be found in the same urethra, with comparatively healthy portions between. These are the "multiple" strictures of authors.

In such a paper as this, I can do little more than mention these few points in the pathology of stricture; leaving others which may occur to some of you quite untouched, and rather deducing, from what has been stated, the following practical conclusions:—

1st. As the mucous membrane is bulged forward by the deposit beneath it at the stricture, one can perceive the reason for caution in passing an instrument in such a case, lest he should perforate the membrane, instead of keeping in the natural passage.

2nd. One can also perceive that a very special difficulty to be overcome in passing a catheter, in such a case, will be the moving of the urethra, stiffened as it is with the ribbon of lymph, in the way which is necessary to make the catheter turn into the bladder.

3rd. It is noteworthy that we may find more difficulties than one in passing a catheter, as in cases of multiple stricture; and it is a practical fact that it is more difficult to pass the second stricture than the first, and so on with the others. The reason of this is, the uncertainty one experiences in feeling with the point of a catheter when part of it is held tightly in a stricture.

It may now be asked if any stricture can, properly speaking, be called "impassable." The true answer to this question for all idiopathic strictures must be in the negative; for, the cause of the stricture being external to the mucous membrane, the calibre of the urethra must always remain open, however much its walls may be pressed together; but in traumatic strictures it is very different. In them, the ends of the ruptured urethra may be separated so as to render the passage of a catheter impossible, and in more chronic cases, with urinary fistulæ, one can suppose it possible for the anterior part of the urethra, which never receives any urine, so to contract as ultimately to heal over at the end next to the fistula through which the urine escapes. I confess, however, that I never knew of any such occurrence, and I believe it may be boldly asserted that, in all but a very few cases, a sufficiently skilful surgeon will be able to pass some kind of instrument along the urethra, unless the element of previously made false passages comes into play; any one may, then, be foiled in his attempt to pass an instrument, at least with a reasonable expenditure of time and patience.

I have not yet said anything about the complication of spasm in stricture cases. That complication is, no doubt, very frequent, I should say constant, in its occurrence in all bad cases of stricture, but I question if it has such an influence in preventing the introduction of a catheter as has often been supposed. The spasm, in truth, can only occur in the membranous part of the urethra, whith is seldom encroached on by the organic stricture. Its influence is upon the retention of urine, which it certainly renders much more complete than otherwise would be experienced; but it does not increase the tightness of the stricture or the difficulty of passing a catheter through it. The benefit arising from the administration of chloroform in these cases is not that it renders the passage of the organic stricture easier, but that it takes away what would be a difficulty after passing the stricture—viz., the spasm closing the urethra beyond it. I do not think such closure deserves the name of stricture at all; though I am quite sure that it occurs sometimes singly and by itself, causing retention of urine for a longer or shorter period. These are cases which may often be treated successfully without any instrumental interference at all: but when the spasm occurs, as it is sure to do, along with organic stricture, it may be easily removed by chloroform, which, of course, has the additional advantage of saving the patient from the necessary pain and anxiety of catheterisation. Hence, the use of the anæsthetic is most desirable in the majority of these cases during the first passage of the catheter or bougie. Afterwards it may generally be dispensed with.

It is also quite true, that in many such cases, if there is no great urgency in the symptoms, it is advisable even before attempting any instrumentation to subject the patient to a few days of preparatory treatment. Action on the bowels by castor oil or any gentle aperient, the prolonged and repeated use of the hot sitz bath, and of opiate injections or suppositories, are the chief measures from which I have seen advantage. Afterwards, and during the progress of instrumental treatment, I continue these, and often add to them quinine in large doses, fomentations, and even leeches, to the perineum, and where there is much hard lymphatic deposit the continued use of the iodide of potassium. On the regulation of such treatment I need not dwell here, but having mentioned it, to show that I am far from neglecting or undervaluing it, I pass on to speak more in detail of the instrumental means to be employed in the more difficult cases.

The first point to be ascertained before using instruments of any kind for the cure of an organic stricture is the exact seat and nature of the obstruction. This is done partly by the history of the case, which often tells the thing at once. If the patient has had gonorrhœa, followed by gleet, then we are pretty sure that the stricture is due to the specific inflammation implied in the above mentioned state of the parts; but it is often very difficult to make out this point from the patient's statement, and we are forced to depend on physical diagnosis. I have not myself used those fine and apparently exact instruments for measuring the calibre of the urethra invented lately by Dr. Otis, but have simply depended on silver catheters of various sizes. One must not always accept of the assertion of the patient, or even of the diagnosis of other surgeons, as to the very existence of a stricture. I have more than once been astonished at the ease with which I have passed full sized catheters, in cases where I had been led to expect strictures; but, for obvious reasons, I shall not give particulars of any such cases. I always, in commencing my treatment of a case of stricture, use a moderate sized silver catheter, say a No. 7, and pass it down to the stricture. I thus have the position of the first stricture clearly shown to me, and by feeling with my left hand along the course of the urethra in the perineum, I can generally determine something of the extent of the deposit causing the stricture. I then gradually diminish the size of the silver catheter until I can pass it into the bladder.

I have said that I generally use a silver catheter in these cases, and I prefer one of the curve which I now show you; but, if you ask my reason for this preference, I must say that I believe it is simply because I am most accustomed to it. It has often been said that an instrument of almost any shape can be passed into the bladder, and some of us are accustomed to introduce the rectangular staff, but in difficult cases we naturally take the easiest and the one we are most accustomed to. Let me assure you that there is a great deal in being accustomed to one's instrument on all occasions, and not less in regard to catheters than other instruments. Hence, I generally begin with catheters because I am most accustomed to them, and can direct them best; and it is only if I fail with them that I should think of using any kind of flexible bougie.

Here a practical point of importance arises as to whether any, and what, amount of force is justifiable in passing the catheter in such a case as we are supposing. The usual statement of authors on the subject is that no force at all ought to be used; but is this rule adhered to by practical surgeons? In answering this question I have to lay before you two very different methods, recommended by equally good surgeons, for overcoming the difficulty of the introduction. One is to employ very flexible instruments—the best of which are the French filiform bougies, conical bougies, and the bougies à boule, which I now show you. These I have often twirled into the bladder very nicely, and they are good and useful where no false passages have been previously made; but if such false passages exist, they have too often failed in my hands to permit me to trust to them. The other, and very opposite plan of instrumentation, is to use a firm and unyielding steel sound, or gum elastic catheter with a very strong stylet. However, this latter instrument cannot, when of small size, be guided so well as the small steel probe or sound, with a blunt bulbous point. I think this is a good instrument in good hands; but I confess that too much force may be used, and false passages may be made with this instrument almost unconsciously, and the want of a passage through it for the urine is a very great disadvantage. No doubt the flexible French bougies, when once they are introduced, may be left in the bladder, and the urine will escape by the side of them. This I have often seen in my own cases, but I question if it would be quite so safe to have the steel probe in the bladder with a similar purpose. I must say that I have myself preferred to use a common silver catheter in the majority of these very difficult cases: because, even when of the smallest size, it has sufficient strength to be guided accurately, and that is all the force which requires to be employed in its introduction. Nevertheless, it is useless to say to any practical surgeon that no force at all is employed, or that a catheter would enter the bladder in a case of bad organic stricture by its own weight. I consider such a thing to be demonstrably impossible from the extent, the hardness, and the irregularity of the lymph deposit around the strictured part. The only rule which can be given for this difficult manipulation is, that the surgeon should gently but steadily press the catheter along the spongy part of the urethra, holding the penis in his left hand, and, when he believes that its point has entered the membranous portion, he should put the left index finger in the rectum as far up as the prostate gland, and so guide the instrument fairly into the bladder, according to his knowledge of the anatomy of the parts concerned. The position of the eyes of the catheter is not to be trusted to, for I have often found them quite right, while the point of the instrument was in a false passage. A good deal of knowledge and experience of such cases, a good deal of previous practice in simpler cases, and a very great deal of patience are all required before the end in view can generally be achieved.

One great advantage of employing a catheter for this manipulation is, that one can leave it in the bladder after he has introduced it, and this I take to be the best and safest practice that can be followed. It is certainly very desirable that one should distinctly see the urine flow through the catheter before tying it in, but here I must notice a great practical difficulty, which I have not seen adverted to by others—viz., that sometimes the urine does not flow readily through a very small catheter at its first introduction. I have occasionally attributed this, and I think correctly, to want of expulsive power while the patient is under chloroform; but even when he is not under that influence, it sometimes does not flow as one might expect. These patients have long been in the habit of passing urine every little while, and their bladders have become really contracted as well as thickened, so that they contain very little water at any time, and it may well be that, on the introduction of the catheter, there is either none to flow, or not enough to cause the bladder to contract on it, so as to expel it through a very narrow tube. It is also obvious that a very small clot of blood or a little dirt in the catheter may prevent the flow. Suction with a common syringe often overcomes this difficulty, which is really very perplexing. Also, the injection of a little warm water may accomplish the same thing; but a surgeon of experience can say pretty certainly whether or not his catheter is in the bladder, and, if persuaded that it is there, may safely leave it in until, by the help of diluents and fomentations, the urine flows freely through the instrument. I could refer to many cases in illustration of this point. I very well remember a most difficult case of the kind which happened to myself, in consultation with Dr. Mather. The patient was a very stout gentleman, who had been the subject of bad stricture, and was at last compelled to submit to treatment from the increasing difficulty of urination. With great difficulty, I passed a No. 1 silver catheter, but no urine flowed. I was confident, however, that it was fairly in the bladder, and therefore tied it in, and in a few hours thereafter, the urine came through the instrument. This catheter was changed in two days for No. 3, and after about a fortnight's treatment, by gradually enlarging silver catheters retained in the bladder, the stricture was quite overcome, and the gentleman has not, for the last two years, been troubled with his complaint; but by my advice, he has frequently had a full sized instrument introduced by Dr. Mather since I saw him. I have mentioned this case, not only as an illustration of the non-passage of urine at first through a small catheter, but also as an instance of the "continuous dilatation" of stricture by catheters. This is my favourite plan of treatment, and yet I confess that some patients do not bear it well. Small abscesses are apt to form about the scrotum or perineum, and perhaps bad and frequent rigors take place. No doubt these can be diminished or prevented by large doses of quinine and opium, but it is not prudent to persevere in such cases with the practice. The more "gradual," because interrupted, method of dilatation may then be tried. According to this method, the catheter is only allowed to remain a few hours, or perhaps only for a few minutes at a time. Of course, this plan necessitates a more frequent introduction of the catheter, and a longer course of treatment, but it does not confine the patient, and therefore it is much more convenient for most cases in private practice. Both of these methods of treating stricture produce as good cures as can be obtained in any way, and they are almost, if not quite, free from danger to life. It may likewise be claimed for these unpretentious methods of treating stricture, that they leave the urethra in a more healthy state than either divulsion or incision. For the introduction of the catheter, and especially its retention, promote the absorption of the lymphatic deposit, and, along with other treatment, may altogether remove it. At the same time, it permits easy micturition during the whole progress of the treatment, and thus diminishes the great cause of congestion—viz., straining in that act. It has been noticed that there is always more or less pus discharged along the catheter in these cases; but this is quite superficial, and soon ceases after the instruments become unnecessary, or only necessary at considerable intervals of time.

I have now before me a list of 46 cases of stricture of the urethra of various degrees of severity, but most of them old and bad cases, treated by me in the Royal Infirmary, chiefly by continuous dilatation, during the last ten years, and extracted by my house surgeon from the journals of the hospital. In all of these cases the stricture was thoroughly dilated, and the patient was dismissed in as favourable a state as possible. No death occurred, and it is worthy of note that, although in one case the patient remained in the house 65 days, in another, 59, and in another, 40, before I could allow him to go, yet, on the average of the whole, the residence in hospital was only 19 days and a fraction.

The plan of treating strictures by divulsion has been much recommended of late years, and, though it generally goes by the name of Mr. Holt, yet it is undoubted that the credit of inventing the instrument, which he adopted as his own, is due to M. Perrève, of Paris. I now show you both these instruments. They are said by some to merely split the lymph deposit around the urethra, without injuring its mucous membrane; but, according to the observations of others, this membrane does not always escape being torn; and I should think this very likely, because the structure of the mucous membrane is quite continuous with the areolar tissue around it in which the lymph is deposited. It is, therefore, not likely in all, or even in many cases, to escape infiltration and consequent hardening, along with the external tissue, so that, when the latter is forcibly split from within, the former will not often escape a similar lesion; but I have had no opportunity personally of inspecting such a case. Indeed, I have not often performed this operation, because the cases suitable to it are, in my opinion, better treated either by continuous or by interrupted dilatation by means of catheters. The smallest Perrève's or Holt's dilator which is made is not smaller than an English No. 3 catheter, French No. 6. Now, by the time a stricture is dilated to this extent, it is easily cured by the further use of the catheter; for it must be remembered that cases of hard cartilaginous stricture are not generally considered favourable ones for rapid divulsion. It is only when the cicatricial material causing the stricture is thin, and not very hard, that this treatment is to be recommended. But these are just the cases which yield most readily to catheterism when properly conducted. Indeed, this method of Perrève's or Holt's is one of those surgical operations which are temptingly easy of performance, but the results of which are not so temptingly good; for, it must be remembered, death not infrequently follows the divulsion of a stricture. In the hospital table now before me, I am credited with only two cases of Holt's operation: one was successful, but the other died after a lingering illness, caused by abscesses, and probably ending in septicæmia.*

* I am obliged to correct a mistake in the above statement which I have discovered since my paper was printed. It is, that the death attributed to Holt's operation did not occur at all. The mistake arose from my trusting to others for the table, referred to in my paper, of cases which occurred to me in the Royal Infirmary. I did not myself undertake the labour of verifying that table; but, wishing to know something of the circumstances in which this reported death occurred, I had the books produced. In the operation book, the case of Archibald Clarke is given at the right date (17th May, 1877), and it is merely stated that an operation for stricture was performed, with an *unsuccessful* result: whereas, on turning to the ward journal of that date, I found the same case fully reported as one in which the man was admitted with large urinary abscesses already formed. It is there stated that I performed, not Holt's, but Syme's operation, with a perfectly *successful* result, and that the patient was, in due time, dismissed quite well, and with all his wounds healed. How this came to be called a Holt's operation, and how the result was marked unsuccessful in the operation book, and a death in my table, I cannot explain. All I can now do is to withdraw the statement that a case of death from Holt's operation has, as yet, occurred in my hands. Nevertheless, the statement that this operation is sometimes fatal remains quite true, and, without going much into the literature of the subject, I may refer, in confirmation, to Mr. Coulson's series of twelve fatal cases, referred to in Sir Henry Thomson's work on stricture, and to two other cases mentioned by Mr. D. Hill in his essay on the same subject. I dare say that some others might be found in the

It likewise appears from the same table that in the last ten years I have performed perineal section for stricture thirteen times, with three deaths. This may appear to be rather a high mortality even for such cases, but when I remind you of their nature, it will not be wondered at. First, almost all of them had more or less extravasation of urine, and that of considerable duration before admission to the house. In some of them this state had already ended in sloughing of the penis and scrotum. Second, eight of them were cases of old stricture which had suffered much from catheterism, and had many false passages, so that in only one of them could Syme's staff be introduced before cutting. And, third, the patients were mostly persons of irregular life, and of such constitutions as made them readily liable to suffer from hospital disease.

It is interesting to note, as corroborating the above remarks, that of the thirteen cases, two were traumatic, and these recovered well; and the same is true of the only case in which it is noted in the journal that I was able to operate according to Mr. Syme's plan with his staff in the urethra. In all the other ten cases I was obliged to adopt the older operation, doubtfully, *la boutinière* of the French, but certainly identical in the main with the method lately described by Mr. Wheelhouse, of Leeds,—viz., opening the urethra in front of the stricture, and passing a probe or a small director through the stricture, which is then laid open. This is well known to be one of the most difficult operations in surgery, but yet it is undoubtedly the best for cases of impassable stricture, especially if already complicated with extravasation of urine; because by it alone is the difficulty of emptying the bladder overcome, and at the same time the patient is put on the way of amendment. Of these thirteen cases, however, death resulted, as I have already stated, in three; but in all of them the operation had been rendered necessary by extravasation of urine of some continuance, and I do not know of any other form of operation that could have been adopted with any likelihood of greater success. In fact, I would warn surgeons who operate in cases of extravasation, against stopping short of incising the stricture, just behind which the urethra has generally given way. In such a case, although the catheter may be introduced with ease, yet the patient is not safe, unless the above practice has been followed. The truth

medical journals if I had time to look for them, and perhaps all have not been published; as every one acknowledges that fatal and unsuccessful cases are not sufficiently often put on record.

seems to be that if the urethra has given way at any place, there is a constant oozing of urine through the opening into the tissues around, and this will occur the more certainly if there is an obstruction immediately in front of the opening. The same thing does not usually happen with false passages made by the catheter, chiefly because of their direction, and because they are anterior to the obstruction; whereas, sloughing or rupture of the urethra from straining in micturition takes place just behind the stricture and is of much greater size, permitting a freer and more constant escape of urine into the areolar tissue, by which it extends to all the neighbouring parts.

I believe that the internal incision of strictures will speedily take the place of Holt's operation, and of Syme's also, except where there is extravasation of urine as well as stricture. In these cases, as I have already said, external incision is absolutely necessary, but in all other cases, if catheterism is unsuitable, the less dangerous operation of internal urethrotomy ought to be performed, and of all the many instruments that have been proposed for effecting this purpose, the best, because the simplest, and the least likely to do mischief, is the one which I now show you, invented by M. Maisonneuve, and somewhat modified by Mr. Teevan, of St. Peter's Hospital, London. In his recent lecture in a late number of the *Lancet*, Mr. Teevan says he has used it some fifty-three times without a death. I have not myself had occasion to use this instrument, though I shall probably avail myself of it more readily in future. I do not, however, think it warrantable to have recourse to this operation until catheterism has been fairly tried and has failed. Now, excepting in cases requiring perineal section, I have succeeded quite satisfactorily with the method of dilatation. Nevertheless, I admit that there are cases of old stricture, so cartilaginous and obstinate, that it would be proper to incise them; and also, that there may be others, more rarely met with, which are so irritable and contractile that the same practice may be adopted in them. I have likewise mentioned, in a previous part of this paper, that some patients do not stand continuous catheterism well; that abscesses form readily and annoy them. In such cases it is a question proper to be considered, whether internal incision might not free them from these troubles.

In conclusion, I think it may be useful to say a few words on the treatment of retention of urine from stricture. Most of these cases depend more on spasm of the muscles surrounding the membranous part of the urethra than on the stricture, and, therefore, such treatment as will diminish or relieve that spasm will be appropriate for them. Hence, hot baths and laudanum injections, or opiate suppositories, often accomplish the required relief; but if not, chloroformisation and the skilful introduction of the catheter ought to be practised without delay. If, however, all these measures fail, and the stricture is practically impassable at that time, what ought to be done? A great many answers have been given to this question, and various plans of treatment have been suggested, but on the most of these I cannot now dwell at sufficient length. One of the most reasonable plans is to puncture the bladder, in the hope that congestion and spasm may then subside, and the catheter may afterwards be more easily introduced. This may be done either through the rectum, with a bent trocar and cannula, or by means of the aspirator above the pubes. Both of these operations have their advocates; but, as I cannot speak of them from personal knowledge or experience, I pass them by with the remark, that they ought to be very seldom required, and ought not to be practised unless one has good reason to think that the obstruction to the flow of urine by the urethra can be speedily removed. I must give it as my opinion that if, in any case, there is a stricture, perhaps an old stricture, and if no form of bougie or catheter can be got through it, after careful trial with the patient under chloroform, and if the retention of urine has been so complete as to cause much distress, I see no reason for postponing the operation of perineal section, and I should prefer it to any further temporising. Yet such cases must be very rare indeed. I believe that, with due care and some skill, a fine catheter or filiform bougie will be got into the bladder in all cases, except where false passages exist, and even in most of these; and, then, either internal or external division of the stricture may be practised according to the other requirements of the case.

REMARKS ON THE TREATMENT OF STRICTURE OF THE URETHRA.*

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THE importance of the subject under discussion can hardly be exaggerated, because of the prevalence of the complaint, the complications which are apt to attend it, and the difficulties which so frequently arise in its treatment. I desire to contribute my quota to the discussion, and I shall endeavour to look at the subject chiefly from a clinical point of view. Having kept accurate records of my cases for many years, I could, if time allowed, have given ample illustration of the various statements which I intend to make.

It is requisite clearly to understand that my remarks refer to "stricture" properly so called, not to cases of mere obstruction to the escape of the urine, which may arise from other causes, such as congestion of the mucous membrane, pressure from tumours, &c. It is also to "organic" stricture alone I intend to refer.

It is, as it appears to me, necessary that the terms employed, and the pathological conditions implied by these terms, should be clearly defined at the outset. *Organic* stricture is well known to imply a pathological change in the structures at the place of contraction. It is usually due to antecedent inflammation which has caused the effusion of organisable lymph into the sub-mucous textures. When, however, there is no lesion of the mucous membrane such material is not poured out either on the free surface of that membrane or into its substance. It is in the sub-mucous areolar tissue alone that such deposit takes place. The amount of effusion varies, of course, very much, and determines the length of the contraction and the thickness of the tissue involved. The degree of narrowing or contraction will thus vary from a mere "thread" confined to one side of the canal, to the consolidation of the whole structures of the penis at the seat of the affection.

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* The following observations were made at the Southern Medical Society on the 8th of January, during a discussion initiated by Dr. Ebenezer Watson. They have special reference to the remarks made by him before that Society, and not to a subsequent paper read by him before the Medico-Chirurgical Society. They are printed at the suggestion of various members of the Society.

The mucous membrane, too, may not even be fixed by the sub-mucous effusion, though it is pushed in towards the canal by its mechanical pressure.

Traumatic stricture, again, which is the other form of organic stricture, implies, as a rule, the effusion of lymph *into* the mucous membrane itself; and as from the usual causes of this lesion the canal is cut transversely, the cicatrix, which results, lies across the canal and gives rise to a hardening and puckering of the mucous membrane itself. This, to my mind, is a most important fact to be kept in view.

Spasmodic stricture, as it is called, is usually but a complication—though an important one—of the organic. That, however, it may arise in certain conditions apart from that affection, which I cannot at the moment stop to consider, I have no more doubt than I have of any practical fact which, though only seen at considerable intervals, has been clearly demonstrated to me by evidence which was at the time perfectly conclusive.

I have no intention of troubling you in the meantime with any further classification of strictures than the general one to which I have alluded. My main object will be to try to define (and in this way to supply, what I respectfully submit, is wanting in Dr. Watson's paper) the indications which determine our mode of treatment, for I hold that order can be got out of the chaos which seems to prevail among the many modes of treatment before the profession, and that it is the duty of the clinical observer so to test these different proceedings as to define not only that which is best among the different methods employed, but also to discover the special form of stricture for which each of these approved methods is most suited.

In order to determine the best mode of treating a stricture, it appears to me essential to consider its cause, its position, its extent, and the complications which attend it. 1st. As regards the *cause*, was it inflammatory or traumatic? 2nd. As regards its *position;* is it near the meatus; in the spongy portion of the urethra; or, as is usual, at the first part of the membranous portion? 3rd. As to *extent* and age (as affecting the completeness of the organisation of its structure), whether it be recent and limited; or extensive, old and cartilaginous; or whether, on the other hand, it be of that less usual character to which the terms *recurrent*, *resilient*, or *india-rubber* have been applied. 4th. The nature of the *complications* (if any), which attend it—abscess, sinus, spasm, irritability, or whatever else may introduce into its treatment some special feature. The condition of the bladder, and above all, that of the kidneys, should be investigated and considered.

The more frequent occurrence of organic stricture, be it inflammatory or traumatic, at the beginning of the membranous urethra, is, of course, a well established fact, though the explanation is not always understood. Besides, being naturally the narrowest part of the canal (the "collar" of the urethra as it has been termed), the effect of the deep perineal fascia in constricting the canal, and the existence of the arch of the pubis above, against which the urethra may be compressed by violence applied to the perineum, go far to explain why inflammation or injury should exert undue influence upon that part of the canal.

In my experience, the vast majority of organic strictures are due to neglected urethritis. I mean neglected in this sense, that they are treated by internal remedies without the use—or at least the proper use—of injections. I may state in passing, that I have not myself prescribed any balsams in the treatment of urethritis for over twenty years, and I am prepared to hold that in no case are they necessary, while a reliance upon them, to the neglect of injections, constitutes, in my opinion, the chief cause of gleet and stricture. A strong solution of nitrate of silver, used as an injection, is the other great cause of stricture. With the exception of that salt, I know of no other which, if used in fit strength, ever gives rise to stricture. It is not the injections (as is often erroneously thought), which cause stricture, but the neglect of them.

Again, it may be well, before proceeding further, to make a remark on the old controversy regarding the permeability or not of stricture. I am quite prepared to admit that in the hands of a capable and experienced surgeon, who has time and patience to devote to the task, there are very few strictures which are impassable; but, on the other hand, I am quite as confident that to ordinary hands and usual experience there are some which are practically impermeable. This I believe to be the fair statement of the case. That strictures, however, now and then exist, in which, from the many false passages, the tortuosity of the canal, and the serious changes which have taken place in its relations, no instrument can be passed, even by the most skilled hand, our pathological museums abundantly show.

In the examination of the urethra in supposed cases of stricture some care must be exercised. No mere difficulty in micturating, or alteration of the stream as regards size, shape, or direction proves that there is a stricture. Such conditions may be due to totally different causes.

On the other hand, a patient suffering from stricture often seeks advice for secondary conditions, which occupy his attention, while the stricture is overlooked. Piles, painful or swelled testicle, aphthous spots on the foreskin, gleety discharge, or pain in the loins, may be the subject of his complaint. It is by the bougie alone that stricture can be satisfactorily examined, and, for this purpose, a large instrument should be, in the first instance, employed. Spasm, and the entanglement of a small instrument in the mucous membrane, have not unfrequently led to errors regarding the existence of stricture. Chloroform is of the greatest service in dubious cases by obviating all spasm; and the *gentle* use of the bougie should always be cultivated. The *bougie-à-boule*, invented by Sir Ch. Bell, is particularly useful for this examination, as it not only readily detects any constriction of the canal, but, as the bulbous portion of the bougie can be readily felt through the textures, the exact position of the stricture can be the more readily determined. The thorough lubrication of the instrument, and the keeping of the penis well stretched, are great aids in its use. By diminishing the size of the bougie till one is "held" by the stricture, the extent, firmness, multiplicity, and exact nature of the constriction can be carefully examined.

This is not the occasion to describe the many plans which have been suggested for passing an instrument, but the position in which the patient is placed (recumbent, with the pelvis raised), the fixing of the constricted portion with the left hand, and the greatest gentleness in manipulation, are important points to be attended to. If the general health is deranged, that must be set right; the bowels got into good order; stimulants and excessive smoking forbidden; the diet regulated; and possibly rest in bed for a couple of days enjoined. These are important, and sometimes essential steps preliminary to the treatment.

Having got the necessary information regarding the stricture, the surgeon has next to determine what "method" he will adopt in its treatment. Without entering in much detail upon a consideration of the many plans which have been suggested for the treatment of stricture, it may be said that they group themselves under the following heads:—(1) Dilatation, by bougies or catheters, rapidly or slowly; (2) Rupture or divulsion; (3) Urethrotomy, internal or external; (4) Caustic; (5) Galvanism; (6) Sub-cutaneous incision; (7) Excision; (8) Forcing with a large instrument (Mayor's plan); (9) Dilatation by air, water, or oil. The 4th, 5th, 6th, 7th, 8th, and 9th may be thrown out of account, as they are no longer employed, or are futile or dangerous.

(1.) *Dilatation*, if slowly conducted, is protracted, troublesome, and hardly to be submitted to, seeing that it gives no better results immediate or permanent than some of the other plans. Few patients willingly submit to be confined to bed and to have an instrument (catheter, or bougie, for both are employed) tied into the bladder for days without any compensating advantage. If dilatation be employed, the method known as Le Fort's "immediate progressive" plan (which was described) is perhaps the most perfect. The instrument should in no case project into the bladder, and the temperature of the patient should be narrowly watched. If there be disease of the kidneys, slow dilatation may prove harmful and even dangerous.

(2.) *Rupture*, though introduced as early as 1812 by Luxmoor, and practised by many surgeons both in England and abroad under various designations since that time, has, in these latter days, been chiefly associated with the names of Perrève and Holt. If employed in proper cases, it must be admitted, in face of the evidence which has been brought to bear on that point, that it does not tear or injure the mucous membrane though it bursts up the sub-mucous deposit. Instruments employed in the divulsion of stricture may be divided into two classes which act very differently. In one class (Dr. Andrew Buchanan's, Wakley's, and others), the rupturing force acting from before backwards on the stricture, may do great harm to the structures involved, while the other class (Perrève, Holt, and many others), acting from within outwards, are free from that danger.

(3.) *Internal Urethrotomy* has stimulated the mechanical skill of many inventors, but this instrument which I show you (Trelat's) is, in my opinion, still the simplest and best which we possess for the purpose. Maisonneuve's (or one or other of its many modifications) is, however, preferred by many. The great art of using such an instrument safely is to take care that it does not enter a false passage, and that we steady the stricture carefully and keep the canal stretched while it is being used. The dangers attending this operation have been much exaggerated. In my own hands I have never had to deplore any accident. It is always to be remembered that the incision which is made, being longitudinal, and so resembling the cuts made in opening the urethra for other purposes, never leads to contraction of the canal as in those transverse tears which attend traumatic injuries. The dilatation of the contracted portion by bougies should be begun in a fortnight.

(4.) *External Urethrotomy* is, as you know, performed with or without a staff. When Syme's small, grooved, steel staff can be passed through the stricture, there can be little doubt but that it should be employed; but when no such aid can be had, then it appears to me that Wheelhouse's modification and improvement of the old operation (*Boutinière*), is the best method of proceeding. It would be waste time to discuss the various other methods of opening the urethra from without, as they have no advantages, but on the contrary, various drawbacks, as compared with the two plans just referred to.

Having in this way cleared the ground, we are in a position with some accuracy to define the relationship between the different methods of treatment and the different forms of stricture.

1. *Recent limited stricture from inflammatory action* in any part of the canal is best treated by rupture.

2. *Old cartilaginous extensive contractions* are to be managed by continuous dilatation, or by internal urethrotomy, followed by temporary dilatation (*i. e.*, by bougies introduced at intervals, but not left in the passage). If these strictures are very severe (*i. e.*, hard and long), and especially if they are accompanied by sinuses and fistulæ, then external urethrotomy should be performed.

3. *In intermediate cases* (*i. e.*, in those holding an intermediate place between 1 and 2), internal urethrotomy followed by rupture succeeds well.

4. *In resilient, retractile, or india-rubber* strictures, neither dilatation nor rupture can be of any avail. Internal urethrotomy should be first tried, and if that fail, Syme's operation should be performed.

5. For *traumatic strictures of limited extent*, internal urethrotomy, followed by dilatation, should be employed; but if the contraction be severe and extensive, it will demand external division.

6. *Irritability* is in reality but a complication of organic stricture, but constitutes a very troublesome condition. If it cannot be set right by rest and attention to the general health and the state of the urine, and if it cannot be overcome by the use of chloroform, whilst the necessary measures for the removal of the stricture are employed, then internal or external urethrotomy is our best resource.

7. The existence of *sinuses and fistulæ* would, other things

concurring, point to external urethrotomy as the method to be employed.

8. If there is *extravasation of urine*, the stricture should be divided at the same time that the necessary external incisions are made.

9. As regards the *position* of the stricture, it may be said that if there be no special indication for the adoption of some other method, strictures in the neighbourhood of the meatus are best dealt with by internal incision; those in the spongy portion by rupture or internal incision, while those behind the bulb may be managed by any plan which is indicated by the condition of the stricture, it being always remembered that the membranous portion of the urethra is that best fitted for external urethrotomy.

10. If the kidneys are diseased, and a stricture present which demands interference, perhaps, on the whole, the best step would be to perform external urethrotomy.

11. Finally, as regards the mechanical measures, it must be always kept in mind, that whatever method is employed, it is necessary to keep the canal afterwards dilated by the use of bougies passed at longer or shorter intervals. An organic stricture is never *cured*, or at least it is so rarely as hardly to affect the statement. The nodular tissue of which strictures are composed has so strong a tendency to renewed contraction that it is necessary to employ measures to retain the normal calibre of the canal after it has been regained. Carelessness in this respect is very common, and a great source of disappointment.

12. "*Urethral fever*," as it is called, can unquestionably be prevented by the use of quinine, given for some days before the mechanical treatment is begun, and continued during its progress; this, with the administration of chloroform, if any severe manipulation is to be employed, will generally ward off an attack. A full opiate given after the operation is also of much use. Flemming's tincture of aconite in two minim doses after operation is also a valuable remedy.

13. *Retention of urine* is, as you all know, a complication of stricture readily established. Any congestion or spasm, however induced, will quickly close the diminished passage by which the urine has hitherto escaped.

I do not agree with Dr. Watson as to the treatment to be pursued in this condition. I do not recommend that an attempt should be made to pass a catheter in these cases before other measures have been tried. I think this advice is especially useful to young practitioners, as, if they are foiled (as they will often be) in attempts to pass an instrument, they will not unlikely thereby forfeit their patient's confidence.

If the patient is put to bed and made warm; if he can obtain a hot hip bath; and if a dose of castor oil and laudanum be got to act upon his bowels; or, if (the case being too urgent for such delay) a subcutaneous injection of morphia is administered when he is in the hot bath, or after he is warm in bed, then, in the majority of cases, spontaneous relief will be obtained. Sometimes the introduction of a piece of ice into the rectum, and the application of the same above the pubes, removes effectually and quickly the congestion or spasm which has aggravated the stricture. If these measures fail, and the bladder is injuriously distended, it becomes necessary to consider by what measure the retention will be most easily relieved, and also, it may be, whether we can adopt a plan in doing so, which will remove, at the same time, the stricture itself.

In all cases, chloroform should be administered. Its aid is invaluable in such cases. If the intention be merely to withdraw the urine, a catheter (the small steel probe pointed instrument, though a dangerous one in inexperienced hands, is often useful) may be tried gently and cautiously; or a full sized bougie passed down and pressed against the anterior end of the stricture, and then suddenly withdrawn; or, what I think is in all respects an infinitely better plan (and this constitutes the treatment which, under these circumstances, would be adopted in my clinical wards), the needle of an aspirator should be inserted in the middle line, above the pubes, and the urine withdrawn. This, as we now know from ample experience, can be repeated, at short intervals, with perfect safety, so as to keep the bladder free, and, as the urethra is thus left at rest, the temporary conditions, on which the aggravation of the symptoms depend, have time to disappear. If, on the other hand, we desire to deal permanently with the stricture, at the same time that we relieve the retention, we may rupture the stricture with Holt's instrument, as I have frequently done, or open the canal behind the stricture in the dilated portion, and divide the constriction from behind forwards; or we can perform external urethrotomy by Syme's or Wheelhouse's method, according to the nature of the case that we have in hand.

As regards puncture of the bladder, I may say, in passing, that, during the many years that I have had to deal with no inconsiderable number of cases of stricture, in hospital and private practice, I have never had occasion to tap the bladder from the rectum; and only upon very rare occasions have I failed to afford relief, when I desired it, by the passage of instruments.

As reference has been made to the use of catheters in enlargement of the prostate gland, I may say, though it is only indirectly connected with the subject in hand, that I never use an instrument of greater length or curve than that employed for ordinary purposes, and that I do not possess what is commonly called a "prostatic catheter." I have, however, seen the greatest advantage from the use of Mercier's *Sonde Coudè.* That instrument can often be passed with the greatest facility, when there is special difficulty with the ordinary catheter.

In these remarks I have avoided all reference to the views of Otis and others, and have made no reference to the urethrometer or urethroscope, or to the treatment by over-distension, and many other lesser points, which my time would not admit of my discussing. It will be seen from these remarks how far and in what particulars the views which I hold and the treatment which I adopt in dealing with this most serious and difficult ailment agree with or differ from those which have been explained by Dr. Watson.

HOOPING-COUGH, AND WHAT IT TEACHES US OF THE SOUNDS OF THE HEART.

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I. HOOPING-COUGH CONSIDERED PRACTICALLY.

THE returns made to the Registrar-General for the month of January sufficiently show to what a vast extent hooping-cough is now prevailing throughout Scotland, and more especially in the city of Glasgow, 135 deaths being recorded, of which 88, or more than one-half, occurred in Glasgow, and 84 among infants and children under five years of age. There are no statistical data, so far as I know, to determine the average mortality of this disease; but an approximate estimate can be readily formed by any medical man of sufficient experience, if he recall the deaths which have occurred in his own practice—and these are too noteworthy to be easily forgotten—and compare the amount with the estimated number of his patients.

Proceeding in this way my estimate is, that the death-rate in hooping-cough is not more than one in forty, or 2·5 per cent. This proportion gives for last month 5,400 as the number of cases throughout Scotland, 3,500 for Glasgow, and 3,360 among infants and children under five years of age.

It is not, then, to be wondered at that so many remedies have been tried for a disease that is not now, for the first time, widely prevalent in this country; nor will it surprise those who have made a study of such remedies how very few of them have stood the test of experience. Is this, then, a sufficient reason for declaring, as so many writers have done, that hooping-cough is an opprobrium to the medical art? I am so far from being of that opinion, that I have no hesitation in saying that I know no disease in which an intelligent physician, while admitting frankly that he can neither arrest the disease nor even shorten it by a single day, is yet able, by carefully studying the cases committed to his care, to do more good, both in preserving human life and mitigating human suffering; and that not by any panacea or specific remedy, which he prescribes in all cases indiscriminately, but by the judicious use of a very few well known remedies, and by carefully watching over the hygienical condition of his patients.

Of those two methods the latter only is required in the great majority of cases of hooping-cough; I should say in at least from 75 to 80 per cent. These in mild, good weather need never be confined to the house, and require little more attention from the physician than a person in good health, ignorant of medicine. It is quite otherwise in cold, wet weather, when incautious exposure may at once aggravate a mild disease into one of the most serious character; and the physician is required to exert both judgment and authority in imposing restrictions, and seeing that they are obeyed.

Thus it happens that not more than a fourth part of all the cases that occur require medical treatment. But these are so different in form, and in the course which they run, and are fraught with so much danger to life and future health, as to test fully the skill of the physician, and demand his most anxious care.

Four forms of hooping-cough may be distinguished, characterised by the four different ways in which they terminate fatally.

Persons affected with the disease die, according to what I have myself observed, from four causes. 1st. From violent and protracted spasm of the expiratory muscles, causing immediate asphyxia; 2nd, from violent general fever, without any corresponding local affection; 3rd, by exhaustion of strength from the long continuance of a painful and wearing out disease; and 4th, from disorganisation of tissue in the lungs or brain, occurring as a mechanical effect of the violent cough, and causing either speedy death or long continued bad health.

1st. In the ordinary form of the disease the spasmodic action of the muscles of expiration is so prolonged as to interfere with the succeeding act of inspiration, that is, with the free dilatation of the glottis, and the action of the muscles of inspiration; the consequence is, that very little air enters the lungs, and, in its passage through the half dilated glottis, it causes the tense vocal cords to vibrate, and give out the stridulous sound characteristic of the disease.

At first there is a rapid succession of such attempts at inspiration in every paroxysm of coughing, the diaphragm alone maintaining the unequal contest; but, as the disease advances, the glottis gapes more widely, and the muscles of the ribs reinforce the diaphragm. The effect is that the hooping sound is louder and deeper, and there are two crowing sounds instead of one; the first proceeding from the action of the diaphragm alone, and the second from the concurrence of the whole muscles of inspiration.

The loud and clear double whoop is always a joyful sound, as promising a favourable termination of the disease; but, alas, there are babies and young children who are never destined to give it out. The power of the diaphragm fails, unable to resist the strong and prolonged expiratory spasm, and so complete asphyxia ensues. The only hope now is from the presence of the physician, or of some properly instructed person. The two thumbs should be immediately thrust into the axillæ of the little patient, while the other fingers grasp the shoulders and elevate them to the uttermost. The shoulders are again depressed, and the arms squeezed firmly against the ribs, and these alternate movements should be repeated exactly as in the treatment of asphyxiated persons.

2nd. The second form of the disease is characterised by high general fever, with the usual symptoms of rapid pulse, hurried respiration, great heat of skin, inappetence, and thirst; but without any local inflammatory affection, to which these symptoms can be referred. The fever may continue two or three days, or longer, and terminate by resolution, leaving the patient very much weakened, and indisposed for long after to leave bed, differing, in that respect, so much from the other little people who are importunate to be up. Sometimes, again, the violent fever continues unabated, and terminates fatally in from three weeks to a month. I had the fullest opportunity of observing this form of the disease in two dear little patients, nieces of my own, over whom I watched anxiously from the beginning to the end of their troubles. They were stout, healthy girls, the one of three, and the other of seven years of age. The symptoms in both were very much the same; the most prominent being a rapid pulse, seldom under 130 in the minute, and not deficient in strength, which continued, along with a dry, burning skin, from the beginning to the end of the disease. The cough had the characteristic sound, but was not severe; the chest exhibited, on the most careful examination, no sign of local disease; and the brain was unaffected. Everything that I could think of, or my medical friends could suggest, was tried, to no purpose; and the patients died in about three weeks from the commencement of the febrile attack. I have ever since been more afraid of this form of the disease than of any other, believing the art of medicine, as at present known, to be impotent before it.

3rd. Patients may die from the long continuance of a painful and wearing out disease. Wine is, in such cases, an invaluable remedy. But I must guard myself from being misunderstood. No child, or young person, should ever taste wine, or any other alcoholic liquid, unless a sufficient reason can be assigned for it. The reason here is manifest. After the disease has continued from three weeks to a month, the strength is more or less impaired, and the child lies in a state of total prostration at the end of the fits of coughing. As soon as it recovers breath, a teaspoonful of wine should be given, with an equal quantity of water. This, even the most hard-hearted teetotaller could scarcely refuse to a poor child in such a position; and nothing more is necessary, so long as the child takes food in sufficiency; but as soon as we observe the appetite failing, and too little food taken, we must increase the wine, no longer now as a mere restorative, but as an invaluable article of nourishment, leaving it to those who delight in logomachies about ill-defined terms, to determine whether the wine acts beneficially as a stimulant, a tonic, or an excitant.

4th. Last of all, the violent succussion of the body from the fits of coughing may rupture blood-vessels, or lacerate more extensively the delicate tissue of the brain or lungs, on which their violence is chiefly expended. This is well illustrated by the swollen face and eyelids, which are so common, and still more by the black eyes, like those of a pugilist, which I have occasionally seen. When such a danger is impending, we must use proper means to soothe irritation, and this is best done by the judicious use of opium: which the great Sydenham, the wisest physician the world has yet seen, declared to be the best gift which Almighty God, in compassion for human suffering, had ever bestowed upon mankind—*humano generi in miseriarum solamen concessisset.* When, therefore, the cough is very severe and threatening, we should never hesitate to give a dose of laudanum, containing one drop of the laudanum for every year of the patient's age. It can generally be given with a teaspoonful of water into the stomach; in other circumstances, it may be injected into the rectum, or used hypodermically; and it should be repeated or not at such intervals as may be required. It may also be applied by rubbing over the spine and chest, but this is objectionable, from the fatigue and exposure which it occasions. All such embrocations and liniments owe their wide popularity to the officiousness of ignorant women, who wish to claim for themselves the whole merit of curing the disease.

I feel confident that these simple remedies and modes of treatment in hooping-cough often do great good, and that they cannot possibly, if judiciously used, do any harm. I cannot, therefore, but recommend them strongly. As to any specific remedy, to be used in every case of the disease, I do not believe that it exists; and have always entertained grave doubts as to the sense, or the honesty, of those who professed such a belief, or followed such a practice.

5th. Such are the forms of simple hooping-cough, and the simple modes of treatment required for them. It is very different when we have to contend against two diseases instead of one; as, when hooping-cough supervenes upon a disease already existing, or, when such a disease supervenes upon hooping-cough. The most common of all such complications, by far, are inflammatory affections of the lungs, produced by imprudent exposure to cold by those labouring under hooping-cough. Not to mention more serious bad effects, the disease, with its characteristic whoop, may be, in this way, protracted even beyond the term of twelve months.

As to the seat of the disease, it is always situated principally, and often solely, in the mucous membrane and glands of the larynx and pharynx; but it generally extends downwards to the mucous membrane of the lungs and stomach, and upwards to every part of the mucous membrane, wherever situated. The eyes and nose are almost always implicated, and the frequent attacks of earache show the affection of the tympanum of the ear. The sentient nerves of these tissues, the pneumogastric, the glossopharyngeus, and the first two branches of the fifth nerve, together with the whole motory circuit in connection with them, are always implicated; not only as arising from irritated tissues, but, in all probability, also from the direct deleterious influence of the morbific poison upon the nervous substance; so that the disease may be placed, with as much propriety, after old Dr. Cullen, among nervous diseases, as among the inflammations, as has been done by more recent writers.

That the disease is infectious, spreading from one child, who catches it at school, to all the rest in a distant home, no man of any experience can entertain a doubt, neither can he doubt that it attacks persons of all ages.* Like all such diseases, it depends upon miasms generated and thrown off by the bodies of the sick. These most commonly act by being inhaled by persons breathing air contaminated with them. It is, however, consonant to reason to believe that all infectious diseases were originally, and, therefore, may still be produced by other causes than infection.

II. HOOPING-COUGH AS A PHYSIOLOGICAL STUDY.

Every medical man must have observed the irregularity of the pulse which occurs more or less in every case of hooping-cough. My attention was first specially called to it in the case of one of my own children, in which it took place to such a degree as to excite my most serious apprehension; and I have ever since observed it with the utmost care, and am now in a position to declare that it is not only an invariable symptom, but one of the highest importance to be noted by the practical physician. It is the best diagnostic symptom, always occurring before the whoop, and in many cases in which the whoop never occurs. It enables him also, by the degree in which it exists, at once to judge of the severity or mildness of the disease, and to tell, before asking a single question, how much his patient may have suffered from it during the preceding twelve hours.

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* These facts are so thoroughly well known that they needed not to be stated, but for the purpose of counteracting the statements of Dr. Martyn, a clever navy surgeon, who, though he cannot have seen much hooping-cough aboard ship, on coming ashore saw thirty cases of it, and has thereupon published an ingenious monograph of the disease. It contains the five following remarkable propositions, which are stated in a sailor-like fashion, boldly and clearly. 1st. That, as a matter of fact, hooping-cough never attacks adults, and that from the structure of the larynx, it is impossible that it can do so. 2nd. That it is not infectious, but is caused mainly by the east wind. 3rd. That it does not prevail anywhere within the tropics, or on the shores of the Mediterranean. 4th. That it was unknown to the ancients; and 5th. That previous to the appearance of the author's monograph, it was the most imperfectly known of all diseases, no less than thirteen different theories, all of them wrong, having been entertained of it.

This irregularity of the pulse has been mentioned by a few medical writers, as by Cullen. It is usually ascribed to sympathy and the well known mutual dependence of the functions of circulation and respiration, which is quite true so far as it goes, but very far from being a complete explanation of the whole phenomena that present themselves. Such an explanation, however, now that the mechanism of the circulation has been more fully investigated, we are enabled to undertake with more prospect of success.

There are two great reservoirs from which the supply of blood to the heart is obtained, the one for the right side, and the other for the left. The right side is supplied from the mediastinal reservoir, consisting of the great veins and sinus venosus of the mediastinum; while the left side is supplied from the pulmonary veins; and when the circulation is quite regular, an equal quantity of blood flows from each of these reservoirs into the two sides of the heart, so that a perfect equilibrium is maintained.

It must further be remarked that the mediastinal reservoir is of much less relative capacity than the pulmonary, and that, even if it were completely emptied, a single deep inspiration would at once replenish it by sucking blood into it from the mouths of all the large veins that terminate in the thorax. The pulmonary circuit, again, is vastly more capacious; but, when once depleted, it only recovers its complement very slowly by the supply of a regular quantity in a given time, measured out with the utmost exactness by the right ventricle of the heart. Hence it happens that, whenever the relative fulness of the two reservoirs has been disturbed, a certain interval must elapse before equilibrium can be restored, and the length of that interval must depend altogether on the degree of inequality in the quantities of blood contained in the reservoirs.

Let us now observe what takes place in a paroxysm of hooping-cough. A great many forcible expirations are made in succession without any free inspirations intervening. The consequence is that the mediastinal reservoir is soon exhausted of its blood, and not being again replenished, it can only give a rapidly diminishing quantity of blood to the right ventricle to be transmitted to the lungs. The pulmonary reservoir is now depleted in its turn, and can only give an insufficient supply of blood to the left ventricle. The agony of the paroxysm is now at its height, arising not merely from want of breath, but still more from the failure in the quantity of blood supplied to both sides of the heart. When the paroxysm at length terminates, the mediastinal reservoir is at once replenished with blood, and gives a plentiful supply to the right ventricle; but it is long before that ventricle, labour how it may, can restore the complement of blood in the lungs, and during the whole of that time the left ventricle is only partially filled, and sends out a slender stream of blood incapable of distending the arteries and producing the small undulating pulse, with an occasional and imperfect beat, which is so characteristic of this disease. When the paroxysms are of frequent recurrence, a second taking place before the deficiency produced by the first has been made up, it is manifest that the deficiency in the lungs must go on augmenting, and this peculiar form of the circulation becomes a permanent symptom till the disease begins to abate.

I have still to advert to another observation in hooping-cough, not less interesting and remarkable than the irregularity of the pulse, and intimately connected with it. This observation I had full opportunity of making, during the last six weeks, upon my own grandchildren, seven in number; all of whom have been, and still are, labouring under hooping-cough, three of them having had it in a very severe form; but I have reason to be thankful, all of them now getting better.

To ascertain, as accurately as possible, the state of the circulation, it was desirable not only to feel the pulse, but to examine also the state of the heart. But what was my astonishment, on applying the stethoscope to the region of the heart, to find the action of that organ quite natural, the two heart sounds, *lub dup, lub dup,* being heard just as usual, without the least derangement of the cardiac rhythm corresponding to the irregularity of the pulse. This being quite contrary to what takes place in all ordinary cases, in which the irregularity of the pulse is accompanied with a corresponding irregularity of the heart's action, from which it manifestly proceeds, I could not but be very much struck with it, and at no little loss to find any explanation of it. At length, however, my thoughts were directed into a new channel, and led me to a conclusion altogether unexpected, which I now submit, with due deference, to the consideration of the profession, as I feel myself compelled to adhere to it, notwithstanding my great unwillingness to interfere with the venerable teaching of the great Harvey, and to upset the accepted notions of the whole medical world. The conclusion, which I could not avoid drawing, is, that the two sides of the heart do not contract simultaneously, but in succession, the right preceding the left; and that the two sounds of the heart are produced not in any of the various ways which have been dreamed of by physiologists and practical medical men; but the first sound by the contraction of the right side of the heart, and the second by the contraction of the left side, so that the symbols, *lub dup, lub dup,* when truly interpreted, are simply *right left, right left.*

These views are borne out by the examination of the heart of a living animal, whether *in situ* or detached. The action of the organ consists in a series of tumultuous movements which are not easily followed by the eye from their rapidity and unsteadiness. The movement manifestly commences in the right auricle, and is propagated without a pause downward into the right ventricle. The whole organ is now raised with a rapid quivering movement, and this unsteady locomotion renders less distinct the contraction of the auricle and ventricle of the left side, which take place during the recession of the organ into its place. A period of rest now ensues longer than that from the beginning to the end of the movement. There is no interval perceptible either by the eye or by the ear between the contractions of the auricle and the ventricle of either side. The interval between the successive contractions of the right and left sides is readily perceived by the ear, but cannot be detected by the eye from the unsteady vibration of the whole organ. It may be inferred that the impact of the heart against the ribs concurs with the contraction of the right ventricle, and the pulsation of the pulmonary arteries; while the contraction of the left ventricle coincides with the pulsation of the systemic arteries. We are thus supplied with an easy method of testing this theory experimentally on a living animal; for if it be true, the pulse of the pulmonary artery must precede that of the aorta, and be separated from it by exactly the same interval that intervenes between the two sounds of the heart.

Whoever has had an opportunity of observing the successive contractions of the fibres of the dorsal vessel of a transparent worm, proceeding rhythmically from behind forward, and considers that the central organ of the human fœtus was at one time just such an organ, and acted in precisely the same way, will find therein a strong analogical argument in favour of the doctrine that the same rhythmical mode of action continues unchanged in the perfect organ of the adult.

For the sake of those physiologists who are not physicians, and shut out from the rich store of facts which pathology reveals to us, and so are unable to verify for themselves the preceding observations, I mention an experiment which any one can make upon himself, but let him first be well assured that he has no undue tendency to disease in either lungs, heart, or brain. Let him blow out his breath as completely as he can, and then by a strenuous effort of will refrain from inspiring till his pulse becomes irregular, which it will do in less than half a minute, and continue feeble and irregular for some time after. A young medical friend of my own, with a finely developed chest, excels in doing this, and terrifies the bystanders, as he once did myself, by saying that he could stop the beating of his heart; whereas, he merely disturbs the equilibrium between the mediastinal and pulmonary reservoirs, from which the supply of blood to the two sides of the heart proceeds.

ON THE TREATMENT OF HOOPING-COUGH.

By EBEN. EVANS, M.B. Beaumaris.

It was with great interest I read Dr. Allen's paper on this subject in the January number of the *Glasgow Medical Journal*, and I offer these few remarks on the same subject as the result of some little experience during an epidemic of hooping-cough that occurred in this neighbourhood twelve months ago. Like most young practitioners, I felt some little difficulty in deciding what to do, when called in to my first cases of hooping-cough. Dr. West, in his remarks on the treatment of hooping-cough, says, referring to the various therapeutical agents used in the treatment of this "provoking disease," "The armoury is large enough to yield you an ample choice." When I first read this passage, my feeling was that the armoury was, indeed, "large enough," and too large—Which of the various arms should I use? Fortunately for me, and I think, for my patients, I turned to a smaller armoury. Reading *Dr. Trousseau's Clinical Medicine*, I found that he confined himself mainly to one line of treatment—viz., the administration of belladonna in the form of pill, *e.g.*:—

℞. Ext. Belladonnæ, gr. $\frac{1}{16}$.
Pul. Follii Belladonnæ, gr. $\frac{1}{16}$.

For infants and for children above four years of age, $\frac{1}{5}$ of a grain of each, or the administration of the alkaloid atropia—viz., "one-fifth of a grain of the neutral sulphate of atropia in five ounces of water, a teaspoonful of which is, therefore, equivalent to $\frac{1}{200}$ of the alkaloid." (*Vide Dr. Trousseau's Clinical Medicine.* Vol. I).

Adopting this method of treatment, and keeping a register of the number of paroxysms, by getting the parents to prick a card with a pin, on the occasion of each paroxysm, keeping a separate account of the diurnal and nocturnal attacks, I obtained a record of a large number of cases, and give a report of a few of the cases.

Case I.—A. S., aged 3 years—first seen January 25—did not prescribe any medicine, but gave the mother a card, and requested her to keep an accurate record of the number of paroxysms, day and night.

No. of Paroxysms.

			Day.	Night.
Jan.	26.	...	23	27
„	27.	$\frac{1}{200}$ of atropia,	23	24
„	28.	„	22	22
„	29.	„	21	23
„	30.	„	20	22
„	31.	„	25	25
Feb.	1.	Doubled dose,	20	19
„	2.	„	20	19
„	3.	„	18	17
„	4.	„	18	18
„	5.	„	15	16
„	6.	Pupils dilated, stopped atropia,	16	16
„	7.	„ „	16	15
„	8.	„ „	15	15
„	9.	Resumed $\frac{1}{200}$ of a grain,	14	14
„	10.	„ „	12	12
„	11.	„ „	10	9
„	12.	„ „	12	8
„	13.	„ „	8	9
„	14.	„ „	7	7
„	15.	...	7	6
„	16.	...	5	4
„	17.	...	3	1
„	18.	...	None	1
„	19.	Stopped atropia,	None	None
„	20.	„	3	2
„	21.	„	None	3
„	22.	„	None	None
„	23.	Put patient on tonic treatment.		

No record kept, but mother states had only occasional paroxysms when she heard some other children coughing.

Some eight weeks after, I met the child on the street, and although the mother stated it was "quite over," directly she saw me she gave a most characteristic cough and whoop. Although a very weakly child, she made a good recovery, and the parents say never enjoyed such good health as since.

Case II.—E. S., sister to case No. 1, began to have the whoop on the 31st of January, six days after I first saw the sister. Put her at once on atropia, $\frac{1}{200}$ of a grain every morning, fasting. She made a more rapid recovery than case 1. The paroxysms never exceeded, day 10, night 16, and in fourteen days she was quite free from them, with the exception of an occasional paroxysm on going near her father when smoking.

Case III.—W. J. W., aged 4 years, first seen on the 9th March—early morning. Had been ailing a week; but parents thought it no good to send for a doctor, until the child had a severe attack of epistaxis. The paroxysms were very severe and numerous; the mother said that they numbered 26 day, and more at night. Record kept—In sixteen days the number of paroxysms were reduced to 2 or 3 per day. Child taken away for change of air, and made a good recovery.

In several other cases I believe I gained much by the use of atropia. The results being—

1. A steady diminution in the number of paroxysms.
2. The paroxysms were much less severe.

Dr. Wiglesworth, of Liverpool, in the *Lancet*, 12th April, 1879, I find has an article on this same subject, in which he comes to the same general conclusions, but adds a third, which I did not observe, viz:—

"A change in the character of the 'whoop,' as if the vocal cords were not so closely approximated."

I do not wish to write as if I considered atropia a "specific" for hooping-cough, but I do think that, from my experience in the use of it, in the majority of cases, it proved at least beneficial in lessening "the distress and disgust of the patient and the onlooker." "Hooping-cough is a dangerous malady," and is rendered doubly so from the great carelessness of the parents in allowing their children to run about in the cold and wet. Out of a very large number of cases I saw during the months of January to April of last year, I lost four, and all of these, with the exception of one infant six weeks' old, were cases which had been allowed to run their course unwatched and uncared for, until they were killed by lung complications.

CURRENT TOPICS.

The Late Dr. Macdonald of Skye.—The Buenos Ayres papers make special reference to the lamented death of Dr. Macdonald, who died at Lyndale, Skye, in December last. Dr. Macdonald, M.D., and F.F.P.S., of Glasgow, was for some years surgeon-major of the Argentine Army, and latterly filled the highly responsible position of visiting surgeon to the British Hospital at Buenos Ayres. Last year his health gave way, and his friends thought he would be benefited by a voyage to Scotland. Unfortunately, the change to his dearly loved Skye did him no good. Overwork and disease of the liver speedily ended a useful career. He died at Lyndale, Skye, on Dec. 7. The *Buenos Ayres Standard* of Dec. 23, referring to the deceased, says—Of all the many distinguished doctors in this city, none stood higher either in his profession or as an amiable member of our foreign community than Dr. Macdonald, whose reputation as a physician was only rivalled by the widespread esteem in which he was so deservedly held. As an instance of how much Dr. Macdonald was esteemed in native circles, we translate the following obituary remarks of our colleague, the *Libertad.* The *Libertad* says:—"This well known English doctor has breathed his last in his native country, Scotland, whither he had gone for his health. His name is well known to us all, as he was established in Buenos Ayres since the Paraguayan war. Mr. Macdonald was recommended, with the active Professor of Chemistry in the National College, Mr. Kyle, to the chief in command of the army of operations in Corrientes by Dr. Rawson, then Prime Minister. He distinguished himself for the first time as operating surgeon in the Ensenaditas camp after the battle of Peguajo in Paso de la Patria, as his companions Doctors Gutierrez, Castilla, Golfarini, Biedma, and Mallo can testify. On the 24th May, 1866, Dr. Macdonald displayed his great proficiency as a surgeon in the cure of the wounded entrusted to him. There he was seen beside the beds of the patients day and night, attending them himself. No important operation was undertaken without first consulting his valuable opinion. From that day the name of Dr. Macdonald was on the lips of all his colleagues and the whole army. After fulfilling his duties in the battlefields, and rendering the country signal services, he arrived in Buenos Ayres, where he passed his examination before the Faculty, in order to fill his post as doctor, according to the laws of the country. It may be said that the British community always regarded Dr. Macdonald as one of its first doctors, and his opinions always carried great weight as consulting doctor of the English Hospital. Overwork, with disease of the liver, aggravated much his disease—ulcer in the stomach. In this state, and finding no relief in the hands of his colleagues, he was advised to make a trip to Europe, to consult the great doctors in these cases. Death surprised him in Scotland, where he was cut short in the midst of his career."—*North British Daily Mail.*

HYDRATE OF CHLORAL.—Dr. H. H. Kane, of New York City, U.S.A., specially requests members of the profession with any experience whatever in the use of the hydrate of chloral to answer the following questions, and give any information they may possess with reference to the literature of the subject: 1. What is your usual commencing dose? 2. What is the largest amount you have administered at one dose, and the largest amount in twenty-four hours? 3. In what diseases have you used it (by the mouth, rectum, or hypodermatically), and with what results? 4. Have you known it to affect the sight? 5. Have you ever seen cutaneous eruptions produced by it? 6. Do you know of any instances where death resulted from or was attributed to its use? If so, please give full particulars as to disease for which given; condition of pulse, pupils, respiration and *temperature;* manner of death; condition of heart, lungs, and kidneys; general condition, age, temperament, employment, etc., etc., etc. If an autopsy was held, please state the condition there found. 7. Have you seen any peculiar manifestations from chloral—as tetanus, convulsions, or delirium? 8. Do you know of any cases of the chloral-habit? If so, please state the amount used, the disease for which the drug was originally administered, the person's age, temperament, and the present condition of the patient. Physicians are earnestly requested to answer the above questions, in order that the resulting statistics may be as full and valuable as possible. All communications will be considered strictly confidential, the writer's name not being used when a request to that effect is made. Address all letters to Dr. H. H. Kane, 366 Bleecker Street, New York City.

REVIEWS.

Clinical Lectures on the Diseases of Women, delivered in Saint Bartholomew's Hospital. By J. MATTHEWS DUNCAN, M.D., LL.D., F.R.S.E., &c., &c. London: J. & A. Churchill. 1879.

THIS book consists of nineteen lectures, which appear in very much the shape in which they were delivered at the Hospital. They are in this way probably quite as instructive, and certainly more interesting to general practitioners, many of whom have never had much clinical teaching in gynæcology.

The first lecture is "On Missed Abortion," and, in explaining the difference between it and imperfect miscarriage, the author gives a very interesting case of the latter disease, in which, for eight months, a piece of placenta had been retained, preserving its vitality and giving rise to serious hæmorrhage. Fourteen days after the removal of the placental tissue the woman was well, and the uterus reduced from five inches in depth to its natural dimensions.

Missed abortion is defined as pregnancy in its earlier stages, interrupted by the death of the fœtus without the latter being discharged from the uterus. The details of a case are given, where the discharge did not take place till three months after the death, and then only after the introduction of a uterine sound. Dr. Duncan points out the importance, from a medico-legal point of view, of being acquainted with the subject, seeing that a practitioner, not on his guard, might mistake a missed abortion of five months' duration for a two or three months' pregnancy. In certain circumstances an opinion given to that effect would result in serious unhappiness to those concerned.

In the next lecture, which is "On Abnormal Pelvis," the author condemns the practice of speaking about "forceps cases" and "uterine inertia." He would have us inquire more narrowly into such cases, use the callipers, and so get at the real facts. The above mentioned terms, he thinks, are but cloaks for ignorance or carelessness. Most of the cases which call for the use of the forceps, and in which dreary labour results, are those in which slight antero-posterior contraction or mere smallness of the pelvis exists. Directions are then given for measuring the pelvis with callipers, and otherwise, so as to get an approximately correct idea of its capacity. The author quite believes that, in Germany, competent authorities find 12 to 15 per cent of pelves abnormal, but thinks that that does not hold true in this country. Here, not nearly such a large percentage of abnormal pelves is to be found.

In connection with the practical bearing of pelvic measurements, the following passage occurs:—"I go back to repeat what I said when I was speaking of the second class of deformed pelvis, that the measurement of the pelvis, and especially the measurement of the conjugate, even if accurately made, is not the criterion of the mode of delivery to be adopted at the full time, or if premature labour is induced. In the same woman, conditions may vary in different labours, and, in different cases of the same dimension, conditions may vary, so that at one time perforation may be the right operation, and at another time turning may be the right operation; and I may state to you that turning, or rather, delivery by podalic extraction after turning, is not to be resorted to, unless you have a rational prospect of getting a living child. If your delivery by turning ends in the birth of a dead child, it is, to a considerable extent, a failure; it would have been better to perforate—safer for the woman. You may not justly condemn your practice retrospectively. Nevertheless, it is a fact that you would not choose to turn a dead child; and if you turn a living one, and do not extract it alive, your operation is partly a failure; perforation would have been better." We think many practitioners would do well to commit to memory the above extract, and the whole lecture is of great interest to thoughtful students of midwifery.

Dr. Duncan objects to the term "ulceration" of the womb, and, to the disease, commonly so called, gives the name of "chronic catarrh of the cervix uteri." After describing this affection and giving the details of a case, he recommends treatment by mild astringent injections, sticks of zinc alum, caustic potash, and the actual cautery. He concludes the lecture by saying, "I have said that chronic catarrh is important, and have, in concluding, to add that it is advisable you should not go on indefinitely treating it. If, after two or three trials, which may each extend over several weeks, you fail to effect a cure, you had much better give up further meddling in the matter. You do no good to the disease or to the patient; you may, indeed, by frequent and prolonged irritation, produce a tendency to cancer."

The still very obscure disease "Ovaritis" is the subject of the next lecture. The author has little belief in the existence of neuralgia of the ovary. He thinks that all the painful affections of that gland are due to small cysts giving rise to pressure, or to inflammation in some one or other of its stages. He speaks of the causes and treatment in the following terms, and the passage is a good specimen of the style of the lectures generally:—"Occasionally," he says, "it is seen as a consequence of fever, especially typhoid, of cholera, and of rheumatism; and, in close connection with these diseases, it is very frequently a result of the use of alcoholic liquors, even when these are not taken to excess. At present, my impression is that that is the most frequent cause of the disease; and this view of the causation of the disease is, in the most gratifying manner, frequently corroborated, if not proved, by the cure which follows upon the adoption of teetotal living. A great mass of cases occurs as the consequence of recent marriage, suppression of menstruation, abortion, and delivery at the full time, when there is no evidence of blood poisoning. . . . Now, a few words on the treatment; and I begin by telling you that you will find a great many cases chronic, which is almost a synonym for incurable. I advise you, indeed, in many cases, which resist a properly conducted treatment, to give up the attempt at cure. You will only bother your patient, make her a valetudinarian, and do her harm, by further persistence in attempting to cure a disease which proper treatment has failed to remove. The treatment is modified according to the nature of the disease—according to its acuteness. In every case you wish rest; and, no doubt, the more serious a case is, the more strict should be your injunction as to rest, and in bed. Physiological rest can only be obtained very imperfectly, for the woman must menstruate, and that is an interference with physiological rest. In married women there are other difficulties which do not require to be described. In many cases the use of leeches applied to the neck of the womb, or applied over the inguinal canal, is very valuable. The medicines most relied on are corrosive sublimate, iodide of potash, and bromide of potash. As leeches are specially useful in the acute cases, so frequent blisters over the inguinal ring, or in that region, are frequently very valuable in the chronic cases. Lastly, it has of late years frequently been decided to spay women in this disease; and many cases of the operation are recorded. That operation is still *sub judice.* Most gynæcologists say that it is condemned already, but upon it I reserve my opinion."

The subject of inflammation in the region of the uterus is carefully considered, and the terms "perimetritis" and "parametritis" explained. Perimetritis is, he says, very frequently spoken of as pelvic peritonitis, and parametritis as pelvic cellulitis. He objects to these two latter names, but does not stop to say why. These diseases he calls "vital," as opposed to the "rudely mechanical" disease of procidentia, but he adds, "I believe the time will come when nearly all the diseases of women will be explained by a transcendental physics, including chemistry." The treatment recommended is that proper for inflammation in any other region, particularly rest in bed, and the restricted use of the knife.

Perimetritis is divided into (1) *Adhesive*—very common; often seen resulting from the use of pessaries, giving rise to little pain; simply causing opposing surfaces to become glued together; (2) *Serous*—uncommon; painful; resulting in an accumulation of serous fluid in Douglas' pouch; (3) *Purulent*—where a collection of pus is the result; and (4) *Remote*—resulting from a previous attack of peritonitis, which may have quite disappeared.

In speaking of the forms of parametritis, the author says—"I have told you that remote parametritis may affect the region of the psoas muscle, or may affect the suet." Again, in the chapter on "Aching Kidney," he says—"Cases have been very carefully observed where there could be no doubt that an abscess of the suet was the result of inflammation of the womb." We presume that, by the term "suet," the fat in the neighbourhood of the kidney is meant, but think that the more round about phrase is the better and more delicate, as applied in the case of the human female.

In connection with the subject of "Irritable Bladder," the fact is pointed out that it may be, and often is, due to caruncle, stricture, or some other form of disease of the urethra.

For the treatment of vaginismus, Dr. Duncan has little confidence in excision of the hymen, except in those cases where you, in that way, remove some diseased tissue which has been the cause of the irritability.

The author does not believe in obstructive dysmenorrhœa. He thinks smallness of the canal and flexions never cause pain to any such extent as to call for treatment. He is of the opinion that tonic or clonic spasm is the real essence of the disease, and that it may be very severe where there is no abnormal mechanical condition of the uterus discoverable, and where the body of the uterus is not only not enlarged, but unnaturally small. He condemns treatment by opiates as being likely to lead to their habitual use, and says that he has personally known very great evil result in this way. Much confidence is not to be placed in drugs, but saline laxatives, guaiacum, and warm hip baths often give relief. The most efficient treatment he considers to be that by dilatation with bougies, beginning with the largest one which will pass, and in the course of a few days, going up to a No. 12 or 13. It is admitted that this often fails to effect a cure, but the author holds that it generally gives relief, which relief is frequently permanent in its character.

In regard to the question, when it is proper to put such a form of treatment into practice in the case of a young unmarried female, the following very sensible remarks are made:—"In regard to the use of this treatment in virgins, I must say a few words in order to guide you as to when you are to resort to it. No rules that I can give you will make up for want of good sense and good feeling on your own part, but I shall give you some hints. The first is that you should, as a rule, not resort to this treatment in an unmarried young woman without the concurrence of three parties—firstly, your own approval; secondly, that of the mother or guardian of the patient; and thirdly, that of the patient herself. All of these should be quite aware of the circumstances, and of what it is proposed to do. Then, I believe, you are justified in recommending it in cases—and they are not rare—where the woman's whole mode of subsistence is ruined. In one of the cases which we had in "Martha," the patient insisted upon our doing anything whatever that was at all likely to relieve her, because she could not keep her situation as lady's maid, for she was confined to bed for three days every month by the disease. That was a sufficient reason in that case, and I can tell you that that girl was cured after a few days' treatment in "Martha," and came back to us to testify her gratitude for being able to keep her place—going about during her monthly period without letting her mistress know that she was ill at all. Then, in other cases, the general health is ruined; and this is not very uncommon. When a woman is laid up and prostrated by a severe attack of dysmenorrhœa every four weeks, her health may gradually give way, and, under such circumstances, there can be no hesitation in resorting to the treatment. There is another set of cases where the severity of the pain is such as to leave no doubt as to the propriety of resorting to any means that offer a hope of cure; and cases of this kind, although rare, are still such as you will all meet with in the course of your practice. In some cases the severity is not so much in the pain as in the accompanying phenomena. Lately, for instance, I had no hesitation in recommending mechanical treatment in a young unmarried female, not because the pain was extreme, but because when the pain came, she had attacks of suicidal mania; and these attacks of suicidal mania were severe when the dysmenorrhœa was severe, and if the dysmenorrhœa was slight, they did not come at all. Under such circumstances, no one would hesitate to recommend the mechanical treatment."

There is a lecture "On Hepatic Disease in Gynæcology and Obstetrics," in which the diagnosis, as between icterus gravis or yellow atrophy of the liver and uræmia, is dwelt upon. "This disease is comparatively a chronic one, occurring in pregnancy. Uræmia, or the disease of the kidneys connected with uræmia, is generally an acute disease, running a rapid course, and occurring most frequently during parturition. In this disease you have delirium, muttering, and lethargy, rather than coma—conditions which are very different from the silence and deep comatose condition of a woman suffering from uræmic eclampsia between the fits. In this woman, and in cases of this kind, jactitation and restlessness are described. The reverse is the case in the coma of uræmia; and in our patient, at the worst, there was a possibility of rousing to clear intelligence for a few minutes, which is not observed in uræmia. In this disease you may, as in her case, have almost constant vomiting. Whether it is accompanied with sickness or not, I am unable to say; but there was, in this woman, even when she was not vomiting, the constant, or very frequent, going on of the efforts of vomiting. This is not observed in uræmia: violent vomiting, for a time, is not uncommon in uræmic cases, but it is only for a time; constant vomiting is not observed. In this disease there was observed great duskiness of the skin, and a peculiarly injected condition of the venous capillaries of the thighs. Now, in the deep coma of uræmic eclampsia, you have simple cyanosis of varying degree, sometimes very intense; but you have not the duskiness and local blueness I have mentioned as occurring in this disease. There are other distinctions between the two diseases, founded upon examination of the discharges from the body, especially upon the examination of the urine, and the two diseases are quite easily distinguished *post-mortem*. . . . The disease is rare, and has not yet come to that degree of distinctness of recognition that enables a lecturer to speak with precision, and dogmatically; but I feel quite sure that the subject is of such intense importance as to be well worthy of the time I have given to it."

In regard to the treatment, the induction of premature labour is advised, as being the only means likely to save the life of the patient.

In the chapter "On Fibrous Tumour of the Uterus," there is given a remarkable case of rapid diminution of a fibrous tumour under the influence of ergot. The author says that "the dulness, which extended one inch above the umbilicus, was, in forty-eight hours, reduced so as to extend only to the level of three inches beneath it." The fact is pointed out that such rapid shrinking is seen only when a great part of the tumour is soft and semi-fluid in character. One point strikes us in reading the details of the treatment. It is related that "We injected three grains of ergotine underneath the skin; this was repeated several times, at intervals of a day; but it had at length to be discontinued, because it produced very serious diffuse inflammation of the cellular tissue, narrowly and fortunately, without a suppurative termination." We cannot understand why ergotine is still used subcutaneously, when it is well known that, if good, it runs a great risk of causing inflammation; if of poor quality, it does little good; when, at the same time, it is almost as well known that the liquid extract of ergot, diluted with an equal quantity of water, may be injected with the best results, and with almost certain freedom from mischief.

A case is recorded of a fibrous tumour causing death, very unexpectedly, from pressure on the uterus, in which Dr. Duncan seems to regret that he did not attempt to destroy it with the actual cautery.

In speaking of malignant disease of the uterus, the following divisions are made:—1. Cancerous hypertrophy of the body. 2. Nodular cancer. 3. Sarcoma. 4. Adenoma; and 5. Malignant ulceration of the cavity. The author remarks that no man need blush at not being able to distinguish between cancer of the pelvis and perimetritis, or between cancerous hypertrophy of the body and fibrous tumour.

In the lecture "On Uterine Hæmatocele," the author recommends as treatment:—1. Perfect rest. 2. Ergot of rye. 3. Ice poultices. 4. Evacuation by the knife or trocar. He concludes the chapter with the stimulating paragraphs which follow, and which refer to hæmatocele:—"It was unknown when I was a student. I studied medicine in Aberdeen, Edinburgh, London, and Paris, and in none of these places did I hear of such a disease. It is now most difficult to conceive how this most manifest disease could have passed unnoticed. If you consider a gold field—at first, great nuggets are discovered, then smaller ones; then, to find gold, the sand has to be sifted; and lastly, there is none at all. So, in anatomy and pathology, great discoveries were at one time easily made; but now we have to get a microscope, with a lens of the highest power, to find anything new. When I was a student, we had only morbid anatomy; now we hear of nothing but pathological histology. With regard to uterine hæmatocele. Here was a nugget of the largest size, which remained practically undiscovered till a few years ago! This is a remarkable subject for reflection, and shows us how carefully we should scrutinise our cases, for there may be some as great nuggets buried in the field of medicine even now, when we think the time for such gross discoveries is past."

There is a lecture on parovarian dropsy, in which tapping is recommended. Previous to the operation, he depends for diagnosis on the feeling of fluctuation showing a large cyst full of thin fluid, and he considers the diagnosis complete if, after tapping, the fluid is found to contain little or no albumen. He admits, however, that parovarian cysts, if complicated, require the performance of gastrotomy for their cure.

The last chapter treats of procidentia uteri. For the treatment of this condition, he highly recommends episioraphy, so as to fairly contract the vaginal orifice, and the wearing of a T bandage for some considerable time after the operation.

We believe that there are few practitioners or students who will read this book without gaining from it a good deal of useful information. Diseases, and their treatment, are sketched in a broad fashion, and with a bold hand. In this way, the student will carry away a very sound foundation, walls, and partitions, which he can afterwards fill in and ornament as opportunity offers.

It is a book of 212 pages, written, as the extracts we have given show, in a very readable style; and we commend it strongly to those interested in the subject of which it treats.

The Causes and Results of Pulmonary Hæmorrhage, with Remarks on Treatment. By REGINALD E. THOMPSON, M.D., Cantab., Senior Physician and Pathologist to the Hospital for Consumption and Diseases of the Chest, Brompton. With illustrations. London: Smith, Elder & Co. 1879.

IN the preface to this work the author makes some claim to the reader's indulgence, and modestly avows that his conclusions may not be free from error. We believe that these statements are sincerely made; and, while agreeing with the author that the errors in a work of this description "must be manifold," we are able to accept many of the facts brought out in these pages, and to acknowledge no small amount of industry and merit in the research here recorded.

Although the work purports to embrace the whole subject of pulmonary hæmorrhage, yet it is mainly devoted to that which occurs in phthisis pulmonalis. The mere mention of this word raises a question which does not fall to be seriously debated here, but upon which it is necessary for the author to give his opinion—namely, the relation of tuberculosis to phthisis pulmonalis. To this question he gives an unhesitating answer to the effect that tuberculosis is always the result of secondary infection. He appears to agree essentially in his views with Niemeyer, defining phthisis as "that form of destructive disease which terminates a variety of pulmonary diseases, which have their origin in inflammation and irritation." The products of such disease may induce a general infection of the lungs and other organs, as it occurs in acute tuberculosis, or a more local infection restricted to portions of the lungs. He seems to believe that septic material, "derived from a secreting cavity drawn over the bronchial tubes," may be the infecting agent in the production of tubercles. Without entering into the question, it will be regarded as somewhat doubtful pathology to ascribe the power of producing miliary tubercles to septic matter; but, with this exception, our author's view essentially agrees with that of most modern pathologists.

Almost the first question that arises is the relation of phthisis to "initial hæmorrhage." In 1727, Richard Morton considered, under the heading of *Phthisis ab Hæmoptoe*, the question whether pulmonary hæmorrhage may not be the cause of phthisis. Subsequently, Læennec opposed this view; and his views on this point have almost dominated medical opinion since his day. The present author distinctly adheres to the view that phthisis may arise subsequently to a pulmonary hæmorrhage, occurring without evidence of previous pulmonary disease, and he seems to believe that such bleeding may be due to a hereditary or acquired tendency to hæmorrhage, a certain delicacy of the pulmonary vessels. To use his own words:—

"In such cases, careful investigation of hereditary proclivities will generally show that there is a family tendency to bleeding, which may have been accompanied with phthisis in a previous generation, even if a liability to phthisis be not exhibited in the individual under consideration, and this tendency must be considered as distinct from, and not dependent upon, the presence of pulmonary phthisis."

It must be confessed that these statements are somewhat unsatisfactory, leaving the possibility of a slight development of disease undetermined. This being so, we look with interest for his explanation of the mode in which an initial hæmorrhage determines the development of phthisis pulmonalis; and here we enter on what we regard as the most valuable contribution which the work presents. The description by the author, illustrated by excellent plates, of the mode in which the blood which remains in the lung after hæmorrhage is disposed of, seems to us of peculiar value. He summarises this as follows:—"During an attack of rapid or repeated bleeding, dyspnœa, which is induced by the welling up of the blood in the trachea, results in inspiratory gasps often of much force. Under the force of inspiration, the blood in the tubes becomes impacted and driven back into various regions of the lungs, and there finally settles as a fibrinous coagulum, which loses colour and contracts, and may remain for many years a quite inert body." These fibrinous plugs may ultimately undergo calcareous infiltration, and thus, encysted mortary or stony concretions may be formed.

So far, our author's views are consistent, and may be taken as thoroughly trustworthy; but when he comes to describe how these fibrinous masses may give rise to phthisis pulmonalis, we confess that his views seem to us more doubtful. In many cases the fibrinous masses lie perfectly inert, and why that does not occur in every case is not apparent. The author says that "under certain secondary conditions affecting the lungs, these nodules may soften and share in a general phthisis, or they may be mixed with secretion from a cavity, and so these blood residues may be liquified and ejected, leaving cavities of a peculiar appearance. The same thing happens with the calcareous nodules of old hæmorrhages." We should have liked something more explicit than this, and cannot by any means regard these explanations as satisfactory.

Turning from the initial hæmorrhage, the author describes hæmorrhages resulting from the advance of destructive processes going on in the lungs, or from morbid conditions affecting the balance of the circulation in the lungs. Lastly, he describes terminal hæmorrhages—that is, those "occurring after the full development of phthisis, as shown by the presence of excavation." These last hæmorrhages mostly occur from aneurisms in pulmonary cavities, the author remarking that, "as a rule, rupture of an undilated vessel takes place only when excavation has been rapid."

It will be observed that in all these forms of hæmorrhage there is no mention of tuberculosis; and, in fact, the author denies that tubercular nodules have any tendency to produce pulmonary hæmorrhage, although he believes that blood residues which have undergone septic alterations, may by infection produce tubercles.

In our consideration of this work we have dwelt mainly on the pathological part of it, because it is this which forms the principal feature of the book. The chapters on the Clinical Aspect, Physical Signs, and Statistics of Pulmonary Hæmorrhage, call for no special observation. Nor is there anything in the short chapter on Treatment which seems of peculiar importance. We have only to add that the book is well printed, but we have marked a considerable number of typographical errors, some of them of the most glaring character, as where, at p. 23, "roll" appears for "râle;" at p. 46, "blood" for "lung;" and p. 61, "tissue" for "time."

Aids to Chemistry. Part III.—*Organic.* By C. E. Armand Semple, M.R.C.P., London. London: Baillière, Tindall, & Cox.

The system of conducting examinations at the present time, especially in English colleges and hospitals, has been too often unfavourably commented on, to require any further allusion here; and the result, as is well known, is "cramming." The little book before us might be better entitled, "Aid to Cramming Chemistry." As is usual in such volumes published by its author, it contains a great number of facts, massed together as closely as possible, and is consequently most uninteresting reading; and no student by studying such a book could possibly acquire a knowledge of the subject. He might, however, were he to be so fortunate as to have certain questions asked by the examiner, relating to the information given in this book, succeed in passing an examination by its help.

That there is a necessity for such books is unfortunate; that a volume like the one under review has been issued from the press so full of gross mistakes, is inexcusable. We shall give a few instances:—It is stated that only six aromatic hydrocarbons have been prepared, whereas their number exceeds twelve. Naphthalene is said to be the only member of the 8th series that has been obtained; other three members of the series are well known. Alcohols are said all be be "saturated compounds." To this statement there are numerous exceptions, one of them being a well known body, allyl alcohol. The misprints are also numerous. In two lines, we have the statement—"Thus we have Stannethyl, Zn $(C_2\ H_5)_4$ (*sic*), corresponding to tin chloride, Sn Cl_5 (*sic*)." Omissions are no less numerous; for example, the preparation of ethyl chloride from phosphoric chloride and alcohol, a method theoretically possible but never used, is given, the ordinary reaction between hydrochloric acid and alcohol being ignored. But in one instance, the ignorance displayed by the compiler of this volume would certainly cause him to be "plucked" at any ordinary examination for a medical degree. We give the remarkable statement in full. "The *detection of chloroform in a fluid* is performed as follows:—The fluid is placed in a test-tube and heated; chlorine and hydrochloric acid gases are formed (!), which will give (1), *white* precipitates with nitrate of silver, and (2), a *blue* colour with starch and iodide of potassium." Such an error can only be ascribed to the grossest ignorance of the subject.

Although this book cannot render much service to those about to be examined, it might prove a help to examiners. We would suggest that the examiner should prescribe a chapter or two, and make the students under examination point out and correct the errors. This test would decide as to the candidate's knowledge of the subject.

REPORTS OF HOSPITAL AND PRIVATE PRACTICE.

WESTERN INFIRMARY.

REPORTS UNDER THE SUPERVISION OF DR. W. G. DUN.

FROM PROFESSOR M'CALL ANDERSON'S WARDS.

TWO CASES OF PROGRESSIVE MUSCULAR ATROPHY.—Case I.—(This case formed the subject of a recent clinical lecture.) J. H., aged 35, was admitted 9th January, 1880, complaining of loss of power in both arms, especially the left. His family history was good. He had been married for nine years, but had no family. Up till the occurrence of his present trouble he had always enjoyed good health, with the exception that fourteen years ago he suffered, for a period of five months, from a squint, accompanied by double vision. He was unable to say which eye was affected; but for about ten weeks he was annoyed with a twitching of the left eyelid. About two years ago he began to feel a weakness in his left arm, and an inability to raise it above the shoulder; this weakness, however, did not extend to the forearm. At first he thought his arm was simply tired from excessive use. He was employed in dressing millstones. The nature of his work required him to hold in his left hand a chisel weighing from seven to nine pounds. He sat at the millstone with the left elbow resting on the left knee, and steadying the left arm with the right hand, he kept constantly striking the stone with the chisel. He was engaged at this work for a period of fourteen years. Latterly, his work had been much heavier than usual, owing to his employer being short of hands. He continued at his employment for about five months after the commencement of his symptoms, but ultimately had to discontinue on account of increasing loss of power in his arm and general bodily weakness, even a short walk causing great fatigue. With the rest from labour an improvement took place in his health, but the left arm continued getting worse, both as regards the power of movement and bulk.

For about eight years before the commencement of his illness he had experienced, after a long and smart walk, a burning pain in the region of the scapula; but this was not felt when he was at work. With the onset of the weakness of the arm this pain became more severe. About eighteen months after the disease appeared in the left arm, the right became also affected, and this was preceded for about six months by a pain in the shoulder of the same character as that in the left. The disease began in both sides at the shoulders, and the gradual but steady emaciation of the arms and shoulders, but specially of the shoulders, both in front and behind, had been noticed by the patient and his wife.

About a year after the first appearance of the symptoms he began to pay attention to certain twitchings, which he described as being of two kinds. One was a "heavy twitch," sufficient to draw the shoulder back, and bring the arm close to the body; the other consisted of "smaller twitchings of the skin." Both varieties had latterly been on the increase.

Examination of patient.—This was conducted before the class. The general condition of the patient was satisfactory.

The left pupil was seen to be dilated, and this was known to have existed for about a year. The striking feature in his appearance was the loss of power in the arms, and the very observable emaciation of the arms, shoulders, and mammary regions from atrophy involving all the muscles more or less. None of the fibrillary contractions spoken of by the patient were observed. The affected muscles responded normally to the Faradic current, except, of course, those completely disorganised. The temperature of the affected parts was shown to be lower than that of the sound; the surface thermometer marking 97·8° F. on the left thigh, and 96·4° F. on the left upper arm.

Treatment.—This was both constitutional and local. The former consisted of good food, cod liver oil, syrup of the phosphates, and rest; and the latter of Faradisation of the affected muscles. The patient remained in the hospital for about two months, but left much in the same condition as when admitted.

Case II. (This case was related in the course of the *lecture*). The patient, aged 38, a joiner to trade, was admitted into the Western Infirmary, 19th September, 1876, suffering from loss of power in the arms and legs. Family history good. He had suffered from no previous illness of any account. The present illness began in December, 1875. The first symptom experienced was a diminution in the power of the upper extremities, the feeling being similar to that of fatigue after exertion. In January, 1876, while he was engaged at his occupation as a joiner, he discovered that he was unable to drive nails into any object above the level of his head. About this time he visited the Western Infirmary to receive advice. On examination, it was found that he was unable to raise his arms above his shoulders. There was at this time no diminution in the power of the hands, as the grasp of both was equally strong. A quivering of the *platysma myoides* muscle in its cervical portion, and some of the fibres of the pectorals was visible. No pain of any kind was or had been felt at this time. He stated that he believed the disease was extending, as he was beginning to feel the same sense of weariness in his legs which had preceded the symptoms in his arms. No impairment of the muscular power, however, was visible on his being requested to walk across the ward. Although advised at this time to enter the hospital, he did not do so, but continued working till the month of June, when he had to stop on account of difficulty in walking. A month later he was compelled to confine himself at home, as he could not risk going out, having fallen more than once, and not being able to rise until he obtained assistance. When admitted in September he stated that the disease began in the shoulders, and had gradually descended to the arms until it reached the hands, seven months after the first appearance of the disease, the left hand being the first to suffer. He grasped more firmly with the right hand than with the left, and altogether he had more power in the right limb. The various movements of the legs were very much impaired. The muscles of the neck began to be affected about the same time as the legs, the first indication being a difficulty in restoring the position of the head after it was turned to one side, and they had now become so seriously disorganised that the patient was unable to raise his head from the pillow, and when his body was raised the head immediately fell backwards. He had no difficulty in articulation or respiration. A quivering action of the muscles of the thighs and legs was visible, and on placing the hands on the limbs the movement was distinctly and frequently felt. It was also present in the arms, although not so distinctly apparent. This movement had been present, more or less, since the beginning of the disease. No pain was felt in any part of the body. Sometimes there was a feeling like cramp, and a feeling of fatigue was occasionally also experienced. Cutaneous sensibility was at times even more acute than normal. The intellect was unimpaired. The bowels were regular and the bladder unaffected. The muscles, where not completely disorganised, responded normally to the Faradic current.

The patient could not attribute the disease to any cause. He was often exposed to cold. He never received any serious injury, but he frequently overworked himself. His habits had been temperate. It is unnecessary to refer to treatment in this case. He remained in the hospital till 1st November, and, as no improvement had taken place in his condition, he requested to be allowed to go home, where he died shortly after.

LEFT FACIAL PARALYSIS—TUMOUR NEAR PAROTID GLAND, PROBABLY SYPHILITIC—IMPROVEMENT UNDER USE OF IODIDE OF POTASSIUM AND FARADISATION.—The patient, aged 48, is a carter, and is at present under treatment in Ward II. He was admitted on 2nd February, 1880, suffering from paralysis of the left side of the face. There was also a firm tumour near the parotid gland of the same side. He had previously enjoyed pretty good health, although, for the last five or six years, he had been troubled with bronchitis during the winter months. At the age of 19, he had a sore on the penis, which was solitary, but suppurated a good deal. No bubo formed, but, some weeks after, he had a sore throat, which suppurated. He has been married for seven years, and has three children, all of whom are well.

About six months ago, he observed a dark spot behind the ramus of the jaw. This gradually enlarged, but soon subsided under the influence of iodine externally. Shortly after this, however, the swelling began to spread forwards on the face, in the region of the parotid gland, until it attained a considerable size, extending from a little behind the ear to half way between the ear and the nose, its most prominent part being about an inch above the normal level of the cheek. The sub-maxillary glands were unaffected. About the middle of January of this year, he first noticed the paralysis of the face, slight in degree, but gradually increasing, until it became complete. At this time he began to suffer also from severe neuralgic pain, starting from the right side of the head, and extending round to the left, and soon also affecting the tumour.

Condition of patient on admission.—He is a strong, healthy looking man. The striking feature in his appearance is the marked paralysis of the left side of the face, and the fulness of the cheek from the tumour. The latter occupies the situation above stated, and is firm, nodulated, and painful. The paralysed muscles do not respond to the Faradic current; but, on the application of a feeble, continuous current, contraction takes place to a greater extent than on the sound side. Hearing is very defective on the left side. It might be supposed that this was due to disease of the middle ear, but a more obvious cause than this is the presence of the tumour, the pressure of which blocks, to a certain extent, the external auditory meatus, or probably produces congestion of the middle ear; and the justness of these opinions is borne out by the improvement which took place in the hearing, coincident with the diminution of the tumour. The pressure of the tumour on the facial nerve also explains the paralysis of the face.

In cases of facial paralysis, caused by disease of the middle ear, certain symptoms sometimes occur which are absent in this case. In such cases there will probably be a partial loss of taste in the anterior two-thirds of the tongue. The *velum palati* on the paralysed side may be obviously depressed, and the uvula bent like a bow, the point being carried forwards to the paralysed side, and the base a little to the sound side. The perversion of taste present in such cases is due, as Dr. Anderson explained in the course of the lecture, according to Claude Bernard, either to "a modification of the circulation of the part, or to deficient erection of the papillæ of the tongue preventing proper contact between them and the sapid substances." This is the result of paralysis of the chorda tympani nerve—a branch of the facial, which joins the lingual branch of the fifth nerve—as is proved by the slightly metallic taste, first noticed by Duchenne, to result from Faradisation of the membrane of the tympanum, which, at the same time, stimulates the chorda tympani. The condition of the palate and uvula is explained by the implication of the *nervus petrosus superficialis major*, which springs from the facial nerve in the aqueduct of Fallopius, and communicates with Meckel's ganglion, from which the nerves supplying the *levator palati* and *azygos uvulæ* are derived.

The nature of the tumour was not very obvious at first. One of Dr. Anderson's surgical colleagues, who examined it, was of opinion it was malignant, but he himself thought it might possibly be syphilitic, and determined to give iodide of potassium a trial.

On 28th February, the following note was made:—Patient has been taking 10 gr. doses of iodide of potassium since 18th current. The pain in the tumour rapidly subsided, and there has been a progressive diminution in its size, until now there is only a broad ridge of transverse thickening, midway between the ear and the angle of the jaw. The hearing is now about as good on the left as on the right side. The paralysis is somewhat better.

Since the above was written, the improvement in the condition of patient has been maintained; and daily Faradisation of the paralysed muscles has been commenced.

GLASGOW ROYAL INFIRMARY.

Reports under the Supervision of Dr. J. WALLACE ANDERSON.

From Dr. Perry's Wards.

~~A CASE~~ OF MEASLES FOLLOWED BY ALBUMINURIA AND GENERAL ANASARCA.—The occurrence of acute desquamative nephritis as a sequela of measles, though not unknown, is sufficiently rare to prove of interest when brought under our notice. The following case, it can hardly be doubted, was one of measles, and the patient was admitted to Dr. Perry's care on account of the general dropsy which had set in three or four days before. The patient, a lad of about 16 years of age, states that a few weeks ago he took what seemed to be a common cold. He had a cough which caused him pain in the chest; there was also running at the nose and watering of the eyes. It pained him, also, when he looked towards the light. A few spots then came out on his breast, and as there had been measles in the same house, and patient was not aware of ever having had the disease, it was more than suspected that he had now taken it. A doctor was sent for, who pronounced it to be a case of measles. After being three days in bed, and on the third day of the rash, he rose and visited the doctor at his consulting rooms. Patient says it was a cold, blowy morning, but dry, and though he had only a short distance to go, and was well muffled up, he felt very cold and "light in the head." This was on a Thursday. On the following day, the rash was almost gone; his cough was worse, and he could take little or no food. No improvement took place, and yet on the following Monday evening he resumed his employment—that of a hammerman on the "night shift," in a tube work. From the nature of his employment, he was exposed to excessive heat, requiring him to "cool down," from time to time, in the open air. After being two nights at this work, his face was slightly swollen, and he had what he calls "a sleepy feeling" in his legs. On the third morning (Thursday) his face, abdomen, and legs were very much swollen; he was sick, and vomited once or twice. He took to bed that evening. He does not seem to have had any particular pain or uneasiness at this period, but he noticed that he made water often, and very little at a time. The scrotum and penis then began to be œdematous. He was much in the same condition when admitted to Ward III on the following Monday (Feb. 9th), except that the swelling in the lower limbs was less, and chiefly confined to the feet. He was still passing water frequently, and in small amount—not more than four or five pints in the twenty-four hours—and this continued for at least a few days after his admission. It was of a dark smoky colour, highly albuminous, and contained epithelial tube casts. Specific gravity 1013. He was treated with infusion of digitalis, and very soon the amount of urine excreted reached the normal quantity. The œdema of the feet first disappeared, then that of the face, and lastly the ascites. The urine is still slightly albuminous. The case is interesting, not merely as illustrating a connection between measles and renal disease, but as pointing very conclusively to exposure as the cause of the complication. However doubtful exposure to changes of temperature may be as a general cause of dropsy after scarlet fever, it is surely not too much to suppose that the extraordinary want of care on the patient's part of himself, both during the height of the attack and during convalescence, determined this extraordinary, or at least very unusual, sequela of measles. Glasgow Med. Journal

From Dr. Macewen's Wards.

SOME RESEARCHES WITH DECALCIFIED BONE DRAINAGE TUBES.—With the view of obtaining a more economical form of resorbent drainage-tube than that recently introduced and employed by German surgeons, Dr. Macewen has, during the past few months, been experimenting with decalcified bone drainage-tubes, prepared in a variety of ways. His method of procedure, and some of the results obtained, are now given, with his permission, from notes kindly supplied by Mr. Mackay, resident assistant. The object of the researches has been to devise a drainage-tube, less irritating than the ordinary perforated elastic variety, and more particularly one capable of being absorbed. Something less costly than those now being advertised was also aimed at. A collection was first made of the bones of the fowls which had formed part of the ward patients' dietary, and these being thoroughly cleaned, were next, as a rule, decolorised in a solution of chlorinated soda. They were then steeped in dilute hydrochloric acid for three or four days, or until they were sufficiently soft for the purpose intended. The ends were now snipped off, and the endosteum removed, along with any clots present, from the medullary cavity. They were finally put into an aqueous solution of carbolic acid (1-20), and left there till required. The drainage tubes thus prepared were found to resist the action of the tissues for from four to seven days, at the end of which time they were wholly collapsed, and in most cases almost completely absorbed. In order that they might resist the action of the tissues for a longer period, Dr. Macewen has more recently steeped them in a solution of chromic acid and glycerine (1-5 sol. of chromic acid to 20 of glycerine), much in the same way as the chromic acid gut ligature is prepared. The advantages of this form of drainage tube over the ordinary elastic one, are that they set up less irritation in the wound, that the discharge is less (partly the result, doubtless, of the foregoing, but still a more marked diminution than can be well explained in that way alone), and lastly, that being resorbent, the dressing need not be disturbed at least on their account. Of course, if they are procured in the above way, the cost is obviously a mere trifle. The following are a few of the cases in which these drainage tubes have been used with advantage.

I. P. B., æt. 28, labourer, admitted 2nd January, 1880, with a compound comminuted fracture of the left leg at the junction of the middle and lower thirds. There was a wound 3½ inches long at the back of the leg, through which the muscles protruded, and the bones and soft tissues were so comminuted and lacerated that amputation had finally to be performed immediately above the knee joint. A common india-rubber drainage-tube was employed, and the stump was dressed antiseptically. The case did fairly well, except that there was a considerable discharge of pus and a slight separation of the flaps at one end. On the 17th January, ten days after the operation, the flaps were drawn together with three stitches, and a decalcified bone drainage-tube introduced at the open end of the wound. Forty-eight hours afterwards the dressings were taken down, simply to see how the drainage-tube was acting when the discharge was found to be no longer purulent, but serous and very slight in amount. The drainage-tube was somewhat acted upon by the tissues being softened and partly collapsed. From the 19th January there was no discharge whatever, the drainage-tube disappeared, and the stump healed rapidly and well.

II. Mrs. B., æt. 32, was admitted to Ward XXII with an abdominal swelling. The diagnosis was divided between an encysted peritoneum with ascites, and a large unilocular ovarian cyst. On 11th January, Dr. Macewen made an exploratory incision, extending from a little way below the umbilicus to about an inch and a half above the pubes in the middle line. The peritoneum was exposed, and found to be encysted. Having evacuated the contents of the peritoneum, chromic acid and carbolised stitches were introduced, along with a decalcified bone drainage-tube, and the wound was dressed antiseptically, in the usual way.

14th January.—The wound was looked at to-day, and found to be nearly healed. The mouth of the drainage-tube, which protruded a little distance from the wound, was quite patent. There was no discharge, except a little serum, and the dressings were re-applied.

20th January.—The wound was again looked at, and found to be completely healed. There was not a drop of discharge, and the drainage-tube was now completely occluded, the distal portion having been eaten through, and separated. The cat-gut stitches were also entirely absorbed, but those prepared in chromic acid were still adherent, and in no way acted on.

III. James F., æt. 15, admitted 27th January, with a smash of the right hand and of the lower third of the fore-arm. Amputation having been performed through the upper third of the fore-arm, the skin flaps were brought together by silk and cat-gut sutures, and two decalcified bone drainage-tubes, one prepared in chromic acid and one in carbolic acid, were introduced on the outer and inner sides respectively. Each had been steeped in its solution for eleven days. The stump was dressed antiseptically.

30th January.—The dressing was changed to-day, and the drainage-tubes were found to be still intact. The hair drain, which had been inserted in their interior, was removed, and a little reddish serum flowed out. There was not the slightest redness or irritation about the wound.

7th February.—To-day the carbolised tube was removed, and, except that it was somewhat softened, appeared to be much the same as when it was inserted. The other tube was left *in situ.*

12th February.—No discharge; but wound looked at simply to see the state of the parts. The flaps were completely united, except at the orifice for the drainage-tube.

18th February.—The tube at the margin was absorbed, all but a small portion inside the tissues, and which was firmly fixed there. It was, however, taken out. The stump soon after healed completely.

IV. Arthur N., æt. 15, admitted 18th February, suffering from an acute abscess in the middle of the outer surface of the leg. The abscess was opened, and dressed antiseptically, a decalcified bone drainage-tube being inserted.

20th February.—The wound was dressed to-day, and looked well. The redness about it had almost all disappeared, and there was no pus. The tube, which had only drained some serum, was much acted on by the tissues, being, with the exception of the outer portion, quite collapsed.

24th February.—The dressings were taken off, and the wound found completely healed up. The drainage-tube had disappeared.

Dr. Macewen has by no means completed his researches with these tubes, and has not yet been able to satisfy himself of their advantage, in every case, over the ordinary form.

FROM DR. DUNLOP'S WARDS.

CASE OF SURGICAL EMPHYSEMA FROM FRACTURE OF RIBS. [Reported by Mr. Jackson, Resident Assistant.]—Lachlan M., æt. 20. Admitted 10th December, 1879. In a very low state. His friends, who brought him to the hospital, stated that he had been crushed between the carts while at work (about two hours before admission). On examination, it was found that the fifth, sixth, and seventh ribs, on the right side, were fractured, 3½ inches from their sternal end. The whole of the right side of the chest was emphysematous, and on inspiration, the nipple, along with the superficial structures some 3 inches around it, were forced outwards, assuming a conical appearance, and on expiration a corresponding cup-shaped concavity was produced. The chest was strapped with belladonna and adhesive plasters, and tightly bandaged.

Patient speedily rallied, but on the third day pneumonia set in, which prostrated him considerably; it soon subsided, however, and he seemed progressing favourably, until the evening of the 22nd, when he again took very ill, seeming almost asphyxiated, and the temperature, which up to this time had been normal, suddenly rose to 101·4° F. On removing the plaster from the chest, a large fluctuating swelling was visible over the seat of the injury, into which a trochar and cannula were introduced, and from 75 to 80 ounces of fluid drawn off, which consisted of blood, serum, and pus; after which the dyspnœa was considerably relieved.

On the 23rd the swelling was again punctured, morning and evening, and from 40 to 50 ounces of fluid taken away each time, very thick in consistence, and containing considerable pieces of broken down lung tissue.

24th.—The structures around the trochar punctures have given way, leaving an opening into the cavity of the thorax, into which three fingers can be inserted, and through which air passes on inspiration and expiration.

During the previous introductions of the trochar and cannula, to draw off the fluid, the antiseptic spray had been used, but this time the cavity was well washed out with 1 to 40 solution of carbolic acid, a drainage-tube introduced, and the usual precautions taken in dressing the wound. After this from 20 to 25 ounces of pus escaped daily when the dressing was removed, up till 30th January, when a diminution in quantity was noticed, and in a few days the wound was almost closed, and very little pus escaped. The drainage-tube was now dispensed with, and the wound dressed with boracic acid solution.

8th February.—Patient is now able to get up for a short time daily, and takes his food remarkably well. On the affected side no breath sounds can be heard, and puerile breathing can be distinctly made out on the sound side.

16th February.—He is now able to go out of doors daily, and feels himself quite strong, the wound being entirely closed.

He progressed favourably, and on 30th February was dismissed quite well.

SURGICAL EMPHYSEMA FROM BROKEN CLAVICLE. [Reported by Mr. J. S. Barker.]—Patrick W., æt. 22, labourer, was admitted into Ward XXIV on 18th February, 1880, suffering from the effects of a severe crush about the chest.

The patient states that, while making some excavations for the purpose of laying drainage pipes, at the depth of about 7 feet, a considerable quantity of earth fell in, burying him up to his neck. In this position he remained a quarter of an hour or so before he could be extricated, and, while in this position, he became unconscious. On recovering consciousness he found himself bleeding from both nostrils, and was unable to move his right arm.

On examination, there is detected a comminuted fracture of the right clavicle, implicating the whole of the acromial end of this bone. There is no external wound. Some of the fragments of the fractured clavicle have evidently lacerated both the pleura and pulmonary tissue, as over the supraclavicular region a soft puffy tumour is present, which crepitates and disperses easily on pressure. There is some puffiness also of the face and neck.

On percussion, the greater part of the area of the anterior wall of the chest exhibits an hyperresonance, which is most marked at the apex of right lung. On the posterior wall dulness is detected over the base of the same lung extending upwards to the level of the seventh dorsal vertebra, due probably to blood effused into the pleural cavity (hæmatothorax).

On auscultation, the respiratory murmur on right side is found to be deficient. Inspiration is shortened, while expiration is prolonged. Sonorous râles are heard, with occasional crepitation. Over the left lung exaggerated breathing is distinctly heard.

Treatment.—A pad in the axilla; elbow raised with the usual sling, and maintained in position by figure of 8 bandage. To promote absorption, tincture of iodine was applied over the anterior and posterior wall of the thorax, on the affected side.

25th February.—The fractured bones appear to be in good position. Bandages re-applied as they have become rather loose.

27th February.—The patient had a fainting fit to-day about 11 A.M., and some trouble was experienced in bringing him out of this state of syncope.

28th February.—Patient examined to-day to find out, if possible, the cause of the syncope yesterday. A soft blowing murmur is heard following the first sound which can only be detected at the base. This murmur may be aortic obstruction, or only an anæmic murmur. The dulness over the base of the right lung extends now only to between the eighth and ninth dorsal vertebræ, instead of to the seventh. The patient has improved since yesterday, and has been placed on stimulants.

3rd March.—The patient ordered quinine and iron. The murmur is very much modified.

5th March.—There is still a murmur following the first sound of the heart, which is only heard at the base, and is not transmitted upwards.

8th March.—To-day no murmur could be detected, and the heart sounds are now quite normal.

15th March.—The patient has improved very much. No dulness can be detected over the base of the right lung. Breathing normal. No murmur is heard at the base of the heart.

At this date (15th March), the patient is quite convalescent, and in a few days is to be sent home. The combination of emphysema with hæmatothorax, following a fracture of the clavicle, made the case very interesting to study.

MEETINGS OF SOCIETIES.

GLASGOW SOUTHERN MEDICAL SOCIETY.

SESSION 1879-80.

MEETING IV.—11th DECEMBER, 1879.

MR. NIVEN, *President, in the Chair.*

DR. E. WATSON delivered an address on STRICTURE OF THE URETHRA, AND A CRITICAL ESTIMATE OF THE VARIOUS OPERA-

TIVE METHODS OF TREATMENT PROPOSED FOR ITS CURE. The substance of this address will be found in Dr. Watson's paper on the same subject, at p. 273.

Dr. Wilson deprecated the passing of a catheter as the *first* resort in cases of retention of urine; opiates and the hot bath are usually sufficient.

Dr. Hall spoke of having had fair success by gradual dilatation.

Mr. Gilmour had used Holt's dilator, and had performed suprapubic aspiration; both with satisfactory results.

Dr. Patterson thought that whenever a drop of urine can get through, an instrument should be got in, but it is a delicate operation, and takes time and patience. He applied the term *forcible* rather than rapid to Holt's procedure. If an instrument, however small, can be passed, the stricture is under command.

Professor Macleod said that the cases should be carefully sifted, and the operation best suited for the particular patient adopted, as there are cases in which catheterisation gives the best results, and others in which Holt's, Wheelhouse's, or Syme's operation is most applicable.

MEETING V.—8th JANUARY, 1880.

MR. NIVEN, *President, in the Chair.*

PROFESSOR MACLEOD resumed the debate on STRICTURE OF THE URETHRA; the remarks he then made are embodied in his paper, beginning at p. 285 of this issue of the *Journal.* He also showed specimens of the various instruments to which he alluded.

Dr. Patterson observed that the late Dr. Lyon, when he experienced any difficulty in getting past an enlarged prostate, used to bend an ordinary gum elastic catheter into the form of a large C; in this way the instrument usually slipped in perfectly easily.

Dr. E. Watson said that, as regards traumatic stricture, he was in perfect agreement with Professor Macleod; we have here to do with an extravasation of urine, and incisions must be made to relieve that extravasation. But the chief difference between Dr. Macleod and him may be best put as follows: suppose that a case of organic stricture, in which difficulty has been found in passing the catheter, is brought into hospital for treatment. What should be done? Dr. Macleod says he would wait and treat the man in various ways, and, if necessary, puncture his bladder with the aspirator. Dr. Watson, on the other hand, maintained that the hospital surgeon ought at once, in such a case, to put the man under chloroform, and introduce the catheter. It is true, that if the man has been drinking, and is cold and miserable generally, it is prudent, if there be no urgent distress from the distended state of the bladder, to put him to bed and quiet his system; but often there is no time for this treatment, and in such an emergency the catheter should be at once tried, the patient being under chloroform, when the result will generally be successful in experienced hands. Aspiration is certainly safe enough, but it is not curing the stricture, nor is it even putting the patient on the way towards cure. As regards external incision, Wheelhouse's is by no means a new operation; it has often been performed by Glasgow surgeons long before Wheelhouse directed attention to it, and without the aid of the special instruments described by him, for which, nevertheless, he deserves some credit. The objectionable feature in this way of performing the operation is his introduction of Teale's gorget after cutting the stricture on the director. This proceeding is quite needless, and it must tear up the parts very greatly. It is scarcely worth Mr. Wheelhouse's while to claim this special operation as his own, when it has often been done here simply with a probe and an old lithotomy staff. In those difficult cases where a surgeon has incised the perinæum down to the stricture, he often feels the healthy urethra bulged out with urine behind the stricture, and if he does so, he will find it much simpler and better to puncture the urethra there, and to divide the stricture from behind forwards, rather than to search for the urethra in the anterior part of the stricture, and cut it from before backwards.

Dr. Morton stated that he had never been reduced to the necessity of puncturing through the rectum, or aspirating over the pubis. He also corroborated Dr. Watson's observations regarding Wheelhouse's operation. He had practised Holt's method in almost every variety of stricture, and with success. In some very advanced cases, in which there is disease of the kidneys or bladder, measures should be taken simply to relieve the bladder; it is dangerous to interfere otherwise in such circumstances.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.

SESSION 1879–80.

MEETING VII.—12TH DEC., 1879.

DR. HUGH THOMSON *in the Chair.*

DR. M'CALL ANDERSON read on THE CLIMATIC TREATMENT OF CONSUMPTION, WITH SPECIAL REFERENCE TO DAVOS PLATZ. This paper will be found at p. 265.

He also showed a patient who had recovered from galloping consumption, and read a short note of the case.

Dr. Coats stated that he had passed through Davos Platz last autumn, having walked to it, a distance of thirty miles, over the hills. He had little to say of it, having only seen it as he went through; but another place, Langwies, which he had rested at on the road, had impressed him favourably as having advantages equal to those of Davos Platz, with this additional attraction, that the sides of the hills were covered with pine forests. It was situated in a valley of almost unequalled beauty, at a height as great as Davos, and with the solar radiation, as he could testify from experience, very intense. The landlady of the little inn had mentioned to him that her daughter had been consumptive before she removed to the place; and that she had since completely recovered. The place would be found adapted to the means of those who could not afford the high charges of Davos. It was accessible by diligence, and well provided with beautiful walks; the neighbourhood had the advantage of being wooded. But there was no physician in the place, the nearest medical man being at Chur, with which there is communication by diligence daily. In regard to the question of whether such a case as Dr. Anderson's was tubercular, it was beyond doubt that there was a non-tubercular as well as a tubercular form of phthisis. To distinguish between them in every case during life was impossible; and even a *post-mortem* examination sometimes failed to bring out whether it was a case of caseous pneumonia, or one of tubercular disease. From the clinical standpoint a very guarded opinion should be given on the question whether a case was tubercular or not.

Dr. Charteris stated that he had lately visited a place in the neighbourhood of Frankfort, situated 1,750 feet above the sea level, which was being utilised for the same purpose as Davos. There were about a hundred patients at the place.

One peculiarity of the treatment was that they were allowed brandy *ad libitum*. In conversation with the attendant he had suggested to him that in such a mountainous country as Scotland it would be easy to find a suitable place of sufficient elevation. The climate was pointed out as a drawback; but since his return he had thought of the Leadhills as a suitable place for a sanatorium for consumptives. In regard to the case of the patient exhibited, he must take exception to the term "galloping consumption." It was sensational, "horsey," and quite misleading. What the exact pathological condition in regard to this man's chest may have been when at the worst, Dr. Anderson had not indicated. In popular parlance galloping consumption was applied to a disease in which, after death, miliary tubercles in a crude state are found studded over both lungs, death generally taking place within five weeks or two months. If Dr. Anderson had "cured" such a disease he had done what no other physician had ever accomplished.

Dr. Perry said that no doubt the modern significance of the term "consumption" was wide enough to include a case of the kind described by Dr. Anderson, which he would call a case of pleuro-pneumonia. The term "consumption" he would keep for cases of tuberculosis. He had never seen a case of cure of acute tuberculosis, but pleuro-pneumonia was quite amenable to treatment.

Dr. Anderson explained that the term was one used regularly in text books. Standard authorities recognised two forms, a tubercular and a non-tubercular. The latter, known also as the acute catarrhal pneumonic form, might also become tubercular. This particular case he did not classify in the tubercular class; he would be inclined to put it in the other category. He made this explanation in order that the discussion might not turn on a mere matter of words.

Mr. John Reid said that clearly this was not a case of tubercular phthisis at all, but one of pleuro-broncho-pneumonia. In his limited practice he had seen a number of cases of recovery, even with symptoms as grave as those detailed by Dr. Anderson. But in all cases in which there is a tubercular development, recovery was hopeless. Mr. Reid detailed some cases of recovery in his own practice with symptoms somewhat analogous to those in Dr. Anderson's case. The term "consumption" was one which should not be used by medical men, as it was too vague; but "galloping consumption" was worse than vague. If it was to be used, it must be as the superlative of a series of which "walking" and "trotting" consumption were the lower degrees. Real tubercular phthisis betokened and depended on a certain hereditary tendency or predisposition; it terminated fatally; in acute cases he had seen it run its course in a couple of months.

Dr. Morton said that the old term phthisis was much preferable to consumption. There was consumption or wasting in a great many diseases, and the term therefore did not convey a specific pathological idea. When phthisis was spoken of, they thought of a condition associated with a tendency to tubercle. A broad distinction should be drawn between the disease and other conditions which more or less resembled it. He could recollect not a few cases of recovery from what appeared to be phthisis,—cases in which the condition was more hopeless even than that of Dr. Anderson's patient. In one case, complicated with pregnancy under circumstances calculated to give rise to mental depression, the patient recovered notwithstanding the unfavourable aspect the case at first presented and the adverse prognosis which had been announced to the friends. Dr. Morton related other instances of recovery from what appeared to be phthisis. But he maintained in regard to the pathological aspects of phthisis, that it was essentially a tubercular disease. His view of the caseous pneumonia spoken of by Dr. Coats was that this caseous deposit was simply tubercle in an earlier stage. He might mention, in regard to treating phthisis by high altitudes, that the Leadhills had at one time actually been tried for this purpose, but he could not say with what result.

Dr. Macfie referred to bad ventilation as a fertile source of phthisis; and to the therapeutic influence of open air treatment as explaining some of the results attained at Davos. He also mentioned the alleged immunity from the disease enjoyed by the inhabitants of some of the Hebrides, which was explained by the enforced ventilation necessitated by the primitive construction of the houses. It was stated, also, that the disease became more common when the houses were built less pervious to the weather.

Dr. Thomson said that it was difficult to say in what condition the lung was in such cases as that described by Dr. Anderson. They had all known cases of recovery of this kind, and the cases were certainly, as a rule, set down to consumption. One case he remembered in which the symptoms were very acute, and were attributed by him to an active development of tubercle in both lungs, an opinion concurred in by the late Dr. Pagan. But to their astonishment the girl recovered, though she was afterwards somewhat delicate. Ultimately, however, she died of phthisis. In regard to elevated situations, some places in the Andes had the reputation of curative virtues in cases of consumption. The conditions favourable to cure found there, were a pure atmosphere, probably well charged with ozone, somewhat rarefied, and well filtered.

Dr. Anderson, in reply, said that there was a combination of favourable circumstances in Davos; the stillness of the atmosphere, especially, was somewhat peculiar; but there were other places in Switzerland which would probably be found equally suitable. In regard to the name given to the case under discussion, he did not invent the term "galloping consumption;" it was a term used in the text books. The word "phthisis" might be preferred to "consumption;" but, etymologically, they meant the same thing. Acute phthisis was a wasting disease of the lung, associated with continuous fever, and which ran a rapid course. Between its two forms, the tubercular and the non-tubercular, it was not possible to distinguish in every case. Talking on the subject, recently, with Dr. Andrew Clarke, he asked that gentleman what features he would consider the most distinctly characteristic of acute phthisis. His reply was to the effect that, if the disease were not confined to one locality, but involved several, say both lungs and intestinal canal, he would say it was an acute case; and he admitted that his (Dr. Anderson's) case appeared to come under the category. In his own mind he had no doubt of its being a case of acute phthisis. He thought that the result of the treatment of these six cases within the last four years, five of them terminating in recovery, ought to challenge the attention of the profession. They had been treated on the same general plan. Certainly they were cases which formerly he would have looked on as sure to terminate fatally.

MEETING VIII.—5th MARCH, 1880.

DR. HUGH THOMSON, *in the Chair.*

DR. EBEN. WATSON read "ON THE TREATMENT OF STRICTURE OF THE URETHRA," which will be found at p. 273.

Dr. George Buchanan said that he had been impressed with Dr. Watson's remark, that it was of great importance that the surgeon should be familiar with his instrument. The form of catheter shown by Dr. Watson was quite different in shape from the one which he himself was in the habit of using. In regard to these instruments, which cut from within or without, they must be greatly more frequently in use with some surgeons than others. In the whole course of his experience he never required to use one of these instruments. They would not, of course, have been of any use in the cases of impermeable stricture with sloughing, or rupture of the urethra, with which he had to deal. He agreed with Dr. Watson, that if you can treat a stricture by dilatation, without any other operation, the result is more satisfactory than by any other means. He had, however, used Holt's method often, and with good results, no bad consequences following. There was one point on which Dr. Watson had not touched, and that was that no stricture *is ever cured.* You may treat in any way you choose, by internal or external incision, by dilatation, &c.; but you could not consider the case as cured till the patient was able to pass an instrument into his own bladder, and did so periodically.

Dr. Macleod complimented Dr. Watson on the way in which he had treated the subject, though it occurred to him that the position he had now taken up, on certain points, was scarcely that which he had occupied in his address at the Southern Medical Society. It was his (Dr. Macleod's) divergence of view from that of Dr. Watson, on these points, that had led himself to read a paper to the Southern Medical Society. To what had been said that evening by Dr. Watson he could take little exception. In regard to Holt's operation, he was astonished to hear that death had resulted from it. When legitimately used, he regarded it as an operation unattended with danger. And this led him to remark, that the great desideratum in a paper on stricture was, to indicate what operations, and what kind of surgical practice were best fitted for particular classes of cases. It was wrong to say that continuous dilatation was to be used in all cases of organic stricture. There were many cases absolutely unfitted for this operation. If, for example, there were any tendency to disease of the kidney, or if there were cases of irritable urethra, from whatever cause, they could not stand the treatment. There was another class of cases, not referred to by Dr. Watson, in which the treatment was obviously inadmissible. These were, the considerable number of cases of resilient stricture, in which the symptoms go and come. Syme's operation, also, was suited to a comparatively limited number of cases. Internal urethrotomy might also be applicable in certain kinds of stricture. Had Dr. Watson, in his paper, given a description of the different kinds of stricture, with the operations or other procedure applicable to each, it would have been a contribution of more value. Dr. Watson had stated that the average duration of his treatment by continuous dilatation was nineteen days. This fact, in itself, condemned the treatment, as other methods did not, as a rule, take half of that time.

Mr. John Reid never used a cutting instrument in stricture, never having found any case which was not amenable to treatment in the ordinary way. One important point was to give a dose of calomel or tartar emetic, and it would generally be found that the passing of a catheter was thereby much facilitated. The passage of the catheter, if it were practicable, was attended with the further advantage that the evacuation of the urine gave a satisfactory relief to the patient, and produced a state of natural relaxation which was conducive to the relaxation of the stricture. The unsatisfactory results from dilatation by catgut bougies, which had been tried in his student days, arose very much from the retention of the urine. It was, therefore, in every view, of great advantage to pass a catheter.

Dr. Thomson had been impressed with the advantage of relieving congestion of the parts. He had himself been in the habit of using an elastic catheter, recommended by Charrière of Paris. It was provided with a *courbe fixe*, which had the property of always recovering its position. It had the advantage of being easily used.

Dr. Watson, in reply, said he was glad that Dr. Buchanan's experience coincided with his own in regard to the infrequency of the necessity for cutting operations, and the success of the treatment by catheters. Dr. Macleod was quite inaccurate in his statement that the position he had taken up in his paper was essentially different from the opinions he had expressed in his address at the Southern Medical Society. Nor was he more correct in stating that in his paper he omitted any reference to what Dr. Macleod called "Resilient Strictures." Why he had made use of such a term to denominate what, in his paper, and in ordinary surgical terminology, was put down as "Recurrent Stricture," he was unable to say. A statement was also made by Dr. Macleod to the effect that by other methods than dilatation, cases of organic stricture might be cured in half the time which Dr. Watson's cases remained in hospital—viz., nineteen days. Now, what surgeon would speak of curing a case of organic stricture, or rather a series of cases, many of them old and bad, in, on an average, nine or ten days?

Dr. Watson did not pursue the matter farther, but in conclusion thanked the Society for the manner in which they had listened to his paper.

GLASGOW UNIVERSITY MEDICO-CHIRURGICAL SOCIETY.

Friday Evening, 9th January, 1880.

Dr. Angus Macphee, *President, in the Chair.*

Mr. John Rigby read an Essay on the germ theory. Mr. Rigby considered in great detail the most recent researches regarding the specific contagia of the zymotic diseases, and in the main agreed with the views at present accepted by the leading members of the profession.

Considerable discussion followed, one or two of the members differing from the doctrines expressed by the essayist.

Friday Evening, 16th January, 1880.

Mr. John Lindsay Steven, *Vice-President, in the Chair.*

Mr. J. M'Gregor Robertson, M.A., moved the affirmative of the following debate, that the present system of medical dispensaries is derogatory to the dignity of the profession, and prejudicial to the best interests of the public. Mr. C. F. Pollock supported the negative. After an animated discussion, Mr. Pollock's amendment was carried by a majority of one.

Friday, 23rd January, 1880.

Mr. Steven, *Vice-President, in the Chair.*

In the absence of Mr. Cluckie, Mr. C. F. Pollock read his Paper on modern eye surgery, and thereafter Mr. Pollock gave a demonstration of the microscopical structure of the eye. By the kindness of Dr. M'Kendrick, 24 microscopes were placed at the disposal of the Society; the specimens, all of which were prepared by Mr. Pollock, were of a high order of excellence, and demonstrated admirably the structure and relations of the chief tissues of the eye. Mr. Wm. Fraser, secretary, proposed a vote of thanks to Mr. Pollock, which was heartily responded to.

FRIDAY, 30TH JANUARY, 1880.

DR. ANGUS MACPHEE, *President, in the Chair.*

DR. WILLIAM ALLEN read a very able Paper on SEGMENTATION AND SYMMETRY IN THE HIGHER ORGANISMS. The paper was much appreciated and commented on by the members present. A hearty vote of thanks was awarded Dr. Allen.

MEDICAL ITEMS.

UNDER THE DIRECTION OF

ALEX. NAPIER, M.D.

[As the production of these Items implies considerable labour on the part of our Contributors, we have to request that translations and condensations originally appearing here will be duly credited to us when appearing in other Journals. We regret to observe that this has not always been done hitherto.—ED. *G. M. J.*]

Benzoate of Soda in the Treatment of Phthisis.—During the past few months there has been much excited discussion in German medical circles with regard to the reported numerous "cures" of consumption by inhalation of benzoate of soda; and the public interest in the matter has also become so great that in some parts of the country the chemists are said to be unable to meet the demand for the drug. The question has recently been very ably handled in a paper read before the Berlin Medical Society (and published in the *Berl. Klin. Wochenschr.* No. 49. 1879) by Dr. P. Guttmann, whose position as head of the Baracken-Lazareth in that city, gives him ample opportunity of putting such therapeutic novelties to the test. The practice under consideration had its origin in the announcement made by Prof. Klebs, in 1879, that tuberculosis is an infectious disease, parasitic in nature, and caused by certain micro-organisms which gain entrance into the system, and there multiply, and that consequently such remedies as would destroy these organisms would probably cure the disease. These results were afterwards corroborated by Dr. Schüller, of Greifswald, who showed, further, that animals, into whose trachea tuberculous masses, or the micro-organisms obtained from these masses by Kleb's method of cultivation, had been injected (through a tracheotomy wound), suffered from extreme emaciation and falling of the hair, and soon died of general miliary tuberculosis, if left to their fate; while other animals, similarly injected and showing exactly similar symptoms, rapidly recovered under treatment with inhalations of benzoate of soda. Experiments on man were soon instituted, at the Innsbruck Hospital, with somewhat astonishing results. Dr. Kroczak published (*Wiener Med. Presse*, 14th September, 1879), fifteen cases treated in this way, giving full details of three of the most striking; two of these presented "unusually extensive local phthisis, with formation of cavities," while in the third case there was in addition a large pleuritic exudation. These three patients were admitted "so to speak, moribund, and were dismissed cured." One of the results was that all tendency to fever was overcome in 7-10 days. But this too cheering picture has another side which must be looked at. In the first place, Prof. Schnitzler, of Vienna, holds that remedies used by inhalation never reach the lung at all, that they never get as far even as the bronchi; Dr. Guttmann, however, has experimentally proved that small (but only very small) portions of drugs so used do pass the glottis. The patients subjected to this method of treatment in the Berlin Baracken-Lazareth numbered 31, and varied in age from 17-56 years; in most of them the disease was far advanced and accompanied by well marked hectic fever. Inhalation was practised twice daily, with a 5°/₀ watery solution of the benzoate of soda, 5 grammes of the salt being at first used per day. While these experiments were proceeding Prof. v. Rokitansky, of Innsbruck, published a paper in which he stated that his patients inhaled $\frac{1}{1000}$ part of their weight per day of the benzoate; Dr. Guttman's patients were, therefore, then put on the same allowance. Here it is stated that a patient weighing about 125 lbs. would need to use 50 grammes of the benzoate, and this, dissolved in 1,000 grammes of water, cannot be inhaled in a shorter period than 2 hours. Of these 31 patients, 9 died, 2 were sent home at their own request, and the remainder were in no respect improved. In not one of the cases was the febrile temperature lowered, or the weight of the patient increased; the night sweats were not lessened, nor were the physical signs in any way altered. The conclusion arrived at by the author, therefore, is the somewhat melancholy one, that benzoate of soda is of no service as a remedy for pulmonary consumption.

The Audiphone and Dentaphone.—These two instruments, and the kinds of deafness in which they will prove most useful, are described by Dr. Ch. Turnbull, in the *Archives of Otology*, December, 1879. They are both so constructed that the delicate sound vibrations which make up articulate speech are collected and conveyed through the teeth and cranial bones directly to the nerve of hearing. The audiphone consists essentially of a thin and elastic diaphragm of hard rubber, presenting a collecting surface of about one square foot; it is furnished with a neat handle, and might easily be taken for a Japanese fan. When in use, the upper edge is drawn down by a silken cord, so as to present a convex surface to the speaker, and a concave one to the hearer. When adjusted, the upper edge is pressed against the anterior surface of the upper incisors (or, preferably, the eye teeth), allowing the upper lip to rest on the diaphragm; false teeth may also be used, especially if they fit tightly. The lower teeth should not touch the diaphragm. The dentaphone (or dento-audiphone as the author would rather call it), is a more ingenious appliance; it is made by the American Dentaphone Company, of Cincinnati. It consists of a chambered box, similar to a telephonic mouthpiece, in which is secured an exceedingly delicate, easily vibrating diaphragm; connecting this with a wooden toothpiece is a silken cord of variable length. The person using it holds the sound receiver in his hand, in any convenient position, its open side towards the speaker, and catches the toothpiece between the teeth; the silk conducting line, which connects the two parts of the apparatus, should be kept moderately tight. The dentaphone weighs but an ounce and a half, and compares most favourably with the audiphone. To use either of those instruments with success, the auditory nerves must be normally sensitive, the hearing power for loud voice, through middle-ear deafness, must be reduced to a minimum, and the upper front teeth must be solid. *Absolute nervous deafness*, the result of direct implication of the auditory nerve, is in no way benefited by them; *profound acoustic deafness*, on the other hand, due to some affection of the middle ear (or conducting apparatus) and its appendages, is signally relieved by these appliances. The *partially* deaf, from whatever cause, as a rule receive no benefit from them. To absolutely deaf mutes these instruments are useless; to semi-deaf mutes, however, they open up a new world of enjoyment. Those who are accustomed, wholly or in part, to interpret sound by the movement of the lips of the person speaking may at first fail to distinguish the words of the speaker, though the sound of these words be distinctly heard; this may very soon be got over by the deaf person getting a friend to read aloud, while the words are carefully followed in a duplicate book or paper. A good exercise for the semi-deaf mute, also, is to put one hand on the instructor's throat, watch the motion of his lips, while his other hand is on his own throat, the speaker meantime holding the audiphone to the mute's teeth.

Growth of Aspergillus in the Living Human Ear.—Dr. H. C. Burnett, of Philadelphia, has an interesting paper on this subject in the *American Journal of Otology*, 1879, Nos. 1 and 2, with an account of 20 cases observed by himself. The aspergillus is a form of mould that shows a marked tendency to grow in the ear of man. It is not, however, microscopically identical with the ordinary blue or green mould, and the author inclines to the belief that, as found in the ear, it is a specific aural fungus; one thing at least seems fully settled—that this fungus is not found anywhere else in the same forms. Two forms of it have been detected in the human ear—A. nigricans and A. glaucus. The former is much the more common, and was the variety present in all the author's cases; it is larger than the A. glaucus, which, as the name would indicate, is lighter in colour. Either may give rise to a stubborn and painful ear disease, and it has not been shown that the inflammation excited by the one differs in any way from that produced by the other. Dr. Burnett's patients varied in age from fifteen to sixty-seven years; fourteen were males and six females. Both ears were affected in four cases. In his general remarks, the author gives the symptoms of the growth in the external ear as stinging, itching, with some pain, and a watery, but scanty discharge. The pain and deafness may be great if the membrana tympani become inflamed. The fungus tends to grow in the deepest parts of the canal. In its early stages it looks dry, downy, and somewhat shining; later it appears crumpled, and when the discharge has been excited, it looks like a piece of wet newspaper. But the microscope should speedily remove any doubt as to the nature of any such matters removed from the ear. The affection is not by any means confined to those living in poverty and squalor, as some have thought; the production of cerumen is the natural protection against an invasion of the aspergillus. The writer gives, as the chief exciting causes of the growth, undue picking or scratching of the ear, and dropping in and leaving there oils, fats, and pieces of vegetable matter, which become rancid and putrescent, and these possibly with particles of pus, serum, or blood from a previous inflammation, provide a fitting soil for the propagation of the fungus. He further notices how easy it would be, by inattention to the cleansing of instruments, to convey it from one person to another. With regard to treatment, while noticing the efficacy of the syringe in removing the false membrane in the majority of cases, the author states that he has employed but two parasiticides—viz., alcohol—usually pure, and the hyposulphite of soda in the proportion of three grains to the fluid oz. of water.—J. M.

Atropia in Acute Otitis Media.—Dr. Theobald, of Baltimore, is convinced that atropia, though for obvious reasons not entitled to hold the same position in aural that it does in ophthalmic practice, is nevertheless an agent of much practical value to the aural surgeon. He has found it most useful in the treatment of acute inflammation of the middle ear—an exceedingly painful affection, usually the result of cold, tending to the formation of pus, and constituting the common form of earache met with in children. It is also of service in the graver forms of otitis media that are so apt to follow the exanthemata. Dr. Theobald recommends its application by instillation into the meatus of a solution containing 4 grains of the sulphate to the ounce of distilled water. This he allows to remain in contact with the drum-head for ten or fifteen minutes. With regard to the safety of using such a powerful remedy in this way, the author remarks that, when the membrane is intact, he has never seen any constitutional effect produced by the repeated instillation of a 4 grain solution. It should be used with some caution where the membrane is perforated, although even in such cases no dangerous results seem to have been observed, and no case where it seems likely that the fluid found its way from the middle ear to the throat. Indeed, in cases suitable for this treatment, the parts are usually so swollen that the transmission of the fluid by the Eustachian tube is almost impossible. The relief of the pain by the instillation is often most marked, and frequently the inflammation seems to be arrested.—*American Journal of Otology.* No. 3, 1879.—J. M.

Caoutchouc Thread as a Ligature for the Umbilical Cord.—Dr. P. Budin, of the Paris Maternité, writes very favourably of caoutchouc thread as a means of occluding the umbilical cord, particularly when the latter is fatty, when the gelatine of Wharton is abundant and soft. He first of all proved, by experiments begun in 1875, that water can be driven through the umbilical vein, even when the cord is surrounded by an eight-fold linen-thread cord; he noticed, also, that when the resistance offered by the ligature was once overcome, water subsequently passed through with much greater ease. An elastic thread of 1·66 mm. diameter permitted the water to pass under considerable pressure, but the resistance experienced on a second trial was the same as at first, the thread having contracted by reason of its elasticity. Threads of 2 mm. and 2·33 mm. diameter, however, put on in 3, 4, or 5 turns round the cord, closed the vessels so effectually that no force which could be exerted with the syringe was sufficient to drive the water through them. At first he feared that it would cut through the cord, but this accident, which he has seen occur with a linen-thread ligature drawn very tight, is one he has never observed in connection with the use of the elastic thread. It is not always easy to apply this ligature, as the surface of the cord is smooth and slippery; this may usually be accomplished, however, if an assistant be at hand to hold the cord firmly by two points, between which the thread is tied. M. Tarnier gets over this difficulty by adopting what he terms *le procédé de l'allumette,* which is thus described:—At the point at which the thread is to be applied, the wooden portion of an ordinary lucifer match is placed lengthwise on the cord; the ligature is then made to include both the cord and the match, the latter, being rigid and rough, preventing the thread from slipping; when the knot has been tied, the match is carefully broken through the middle and withdrawn, leaving the ligature firmly fixed round the cord. M. Budin advises that the thread should be 2 mm.–2·33 mm. in diameter, and should be cast at least 4 or 5 times round the cord. (*Le Progrès Med.* 17th January, 1880).—*Bull. Générale de Thérap.* 15th February, 1880.

in the Practitioner

Alkalies in Anæmia.—Dr. W. Nicholson writes strongly in favour of a more extensive use of alkalies, particularly of potash, in anæmia and in blood diseases generally. He asserts that anæmia, due to hepatic disorder, is the most common of all forms of the affection; that alkalies have a beneficial action on the liver, which action tends to restore the blood to its normal character; and that alkalies ought to take the place of iron in the treatment of anæmia. He insists on the action of alkalies as general remedies, observing that their local antacid effect is the least important action of all. In his opinion the most noteworthy influence of potash, which is seen in the increased secretion and greater fluidity of the bile, is exercised on the liver, an organ which he regards as principally an eliminator of waste products from the blood; potash is further a very feeble diuretic, any action it may have on the glandular system is indirect, and due solely to its action on the liver. Contrary to the general belief, also, the author has never found alkalies depressing, though he is in the habit of giving them largely and continuously, even to old and middle aged people.—~~*The Practitioner.*~~ January, 1880. Glasgow Med Journal

Is Aconite a Diuretic?—Dr. G. H. Mackenzie answers this question in the negative. In a series of five cases, indeed, in which the drug was used for its "antipyretic" action, and in which the heart and kidneys were free of disease, an increase of the urinary secretion followed its use; but in another series of cases, of cardiac and renal disease, aconite failed as a diuretic. It was therefore found wanting "when its action was most urgently needed."—*The Practitioner.* January, 1880.

Muscular Sounds and Murmurs.—Dr. Th. Stein gives here (*Centralblatt f. d. Med. Wissensch*, 6th March, 1880) an illustration and description of Trouvé & De Boyer's apparatus for the investigation of muscular murmurs, in the construction of which the microphone and telephone are so made use of that the slightest sounds generated within it are conveyed to the ear with great intensity. By means of this apparatus, the author shows that if a muscle be dissected out and completely isolated from the surrounding structures, its contraction is attended by no murmur whatever, and that the so-called muscular murmurs are not due to any molecular action in the muscle itself, but simply to mechanical shock and the friction of the muscle against the neighbouring soft parts. This was proved by placing a frog's limb in the apparatus, and causing its muscles to contract slightly by stimulating the sciatic nerve with a very feeble electric current, when a distinct rhythmical friction murmur was heard in the telephone; but, on placing the gastrocnemius muscle, freed from the surrounding structures, in the current, contraction was as marked as before, but no sound was produced; on touching the muscle with a fine hair, also, a murmur again became audible. It is worthy of note, that the murmurs noticed in the first part of the experiment were heard only when the circuit was closed, and not while the current continued to pass through the muscle.

Treatment of Hydrocele by Injection of Perchloride of Iron.—At a recent meeting of the Paris Académie de Médicine, M. de l'Aulnoit read a paper on the above subject, based on the successful treatment of 14 cases. Having noticed that albuminous fluids coagulate with great rapidity on the addition of perchloride of iron, he was led to use this agent in the treatment of hydrocele, in the expectation that the fibrinous coagulum so produced would bind together the walls of the sac, and so completely obliterate the cavity. He directs that the hydrocele should first be completely emptied, and that about an ounce of the fluid should then be returned; this is followed by a gramme and a half of distilled water, in which are diffused two drops of solution of perchloride of iron. Coagulation at once takes place, there is scarcely any pain, the reaction is slight, and the cure is usually so far advanced by the sixth day, that the patient may then be permitted to walk for several hours.—*Bull. Générale de Thérap.* 29th February, 1880.

Trilocular Heart.—Dr. Chiari reports (*Jahrbuch f. Kinderheilk.* xiv, p. 219) having examined the body of a boy who had died of diphtheria, and who had, all his life, suffered from shortness of breath. With the exception of occasional blueness of the lips, however, the patient had presented no sign of cyanosis. The ventricular septum was entirely wanting in the heart; both auricles opened into the single ventricle, from which, also, the large arteries sprang; these vessels were quite distinct and separate in origin, the aorta being situated to the right of and behind the pulmonary artery; the latter was wider than the aorta, gave a branch to each lung, passed into the ductus arteriosus (which was 10 mm. wide, and 5 mm. long), and terminated in the upper part of the descending aorta.—*Centralblatt f. d. Med. Wissensch.* 6th March, 1880.

Vegetable Pepsine.—MM. Würtz and Bouchut, in a communication to the French Academy of Sciences, give the result of their investigations on the sap of the *Papaya-Carica*, a palm tree from South America, where it is known as the "melon tree." The fruit is of a pink colour, sweet and much relished. The trunk of the tree and the network of the leaves contain a bitter milky juice, which, if exposed to the air for some length of time, gives out the smell of rotten cabbage. This juice is obtained by incisions made into the tree; it is neutral and milky; it coagulates immediately, and separates into two portions—the one forming a kind of pulp, almost insoluble, the other remaining as a colourless but limpid serum.

The pure juice, being brought into contact with raw meat, fibrine, cooked white of egg, gluten, &c., softens them in a few minutes, and at a temperature of 120° F. dissolves them in a few hours. Croup membranes, tapeworms, ascarides, &c., are also readily dissolved. They consider that the juice contains a digestive ferment analogous to that secreted by the carnivorous plants, *Drosera*, &c., and they call it *Papaïne.* It possesses this advantage over *pepsine*, that it dissolves the nitrogenous matter, not only in the presence of a small quantity of an acid, but also in a neutral medium, or even in one slightly alkaline.—*St. Louis Courier of Medicine.* November, 1879.—G. S. M.

Addison's Disease.—Nothnagel records, in *Frerichs' Zeitschrift f. Klin. Med.* I, p. 77, some experiments he made to determine the relation subsisting between actual disease of the suprarenal capsules and the pigmentation of Addison's disease. He did not, as most investigators have done, extirpate these bodies, but treated them in such a way as to set up in them an irritative process leading to cheesy degeneration; this he accomplished by crushing them with forceps, through an incision made in the back. Those animals which did not soon succumb from the severity of the operation were carefully tended, and, after a time, killed and examined, when it was found that the supra-renal capsules had undergone the expected degenerative changes. In only three instances were a few slight, greyish spots seen on the inside of the lips and on the gums, but these the author is inclined to regard as accidental, for in none of the other cases was the slightest trace of abnormal pigmentation, or change in their general condition, observable. —*Centralblatt f. d. Med. Wissensch.* 21st February, 1880.

Transudations and Exudations.—In the *Med. Times and Gazette*, 3rd and 10th January, Dr. A. James, of Edinburgh, gives the results of some inquiries he has made on the composition of various transudations and exudations, with special reference to the extent to which this is influenced by simple physical processes, more particularly by filtration. As regards transudations into the various cavities and into the subcutaneous tissue, he finds that the amount of organic matter they contain varies directly as the pressure within the capillaries, while the proportion of salts present remains constant. His general conclusions are:—

1. The pleural and peritoneal transudations have a large proportionate amount of solid constituents, because in these cavities there exist physical conditions which favour (1) the transudation of fluid into them, and, (2) the absorption of the fluid so transuded.

2. In the pleural cavity the above conditions are most favourable.

3. When, as the result of an abnormal composition of the blood or of increased pressure in the vessels, there occurs transudation of fluid through the lung capillaries into the lung tissue, the *inspiratory act* will favour the passage of the fluid so transuded into the pleural cavity when the air passages are free (hydrothorax), but into the air passages themselves when the entrance of air into the lungs is prevented (œdema of the lungs).

4. Cerebral transudation should be regarded rather as an increased secretion (Schmidt).

5. In exudations there is a relationship between the tension and the composition of the fluid: the higher the tension, the thicker the fluid.

6. This is probably due to two conditions:—(1) That in high tension a much larger proportionate amount of the watery part of the fluid is driven out into the surrounding tissues; and, (2) That the tension itself acts as an irritant.

7. In abscesses of long standing the association of low tension with thick pus may be explained as being due to absorption of the watery part of the pus.—G. S. M.

Treatment of Inguinal Bubo.—Dr. J. Mullé gives the following rules as the result of a special study of bubo; they are taken from his thesis (*Thèse de Paris.* No. 401, 1879):—

1. In the case of simple non-virulent bubo, the treatment will depend on the stage at which the affection has arrived. *a.* In the first stage: absolute rest in bed, poultices, and rubbing with a mercury and belladonna ointment. *b.* In the second stage (that characterised by redness and adhesion of the skin): blisters used cautiously, and repeated if suppuration does not show itself; if in spite of the blistering suppuration occur, incise. *c.* In the third stage (suppuration): incision. If the abscess be small, the incision should also be small; compression, by means of collodion, should be exercised over the rest of the swelling, and the edges of the wound

kept apart. If suppuration be extensive, the incision should be large; cicatrisation must be so managed as to prevent the formation of disfiguring and hurtful scars.

2. The chancrous bubo should be treated by poulticing, incision when pus has formed, slight pressure, and, if necessary, injection with solution of nitrate of silver.

3. In doubtful cases treat as for chancrous bubo.—*Bull. Générale de Thérap.* 15th February, 1880.

Treatment of Biliary Calculi.—Dr. T. H. Buckler says that he has seen a number of cases of gall-stone, all of which, except one, were successfully treated with chloroform to dissolve the cholesterine present in the gall-bladder at the time; chloroform is also the best agent for the relief of the agonising pain associated with gall-stone. After existing calculi have been dissolved, then, to overcome the cholesteric diathesis, and prevent the formation of other stones, the patients were all kept on teaspoonful doses thrice daily of the succinate of iron for the period of four to six months. The great majority of patients cannot take by the stomach more than 10 to 15 drops of chloroform every four or six hours, in which cases it should be continued 15 or 20 days. He advises the succinate of iron both as a solvent of gall-stones and of cholesterine fat, whether in the coats of arteries or elsewhere. —(*Boston Med. and Surg. Journal*). *St. Louis Courier of Medicine.* December, 1879.—G. S. M.

Salicylated Camphor. — Dr. Henrot recommends (in the *Union Med. du Sud-Est*) the following as a topical application of a stimulating or slightly caustic nature, to phagedænic, atonic, and syphilitic ulcers, indurated chancres, and ulcerations of the neck of the womb:—Salcylic acid and powdered camphor, of each 10 grammes; mix and add 10 drops of alcohol; this is to be incorporated with 10-20 grammes of vaseline, with sufficient paraffin to give to the mass the consistence of the wax used for suppositories.—*Bull. Générale de Thérap.* 15th February, 1880.

Treatment of Puerperal Infection by washing out the Uterus.—M. Lalesque has treated two cases successfully in this way, using injections of carbolised water. In the first case, a primipara, the forceps had to be applied; there was hæmorrhage both before and after delivery, and the placenta was adherent. On the second day after the confinement, up to which time there had been slight fever, abdominal pain, and distension, she was seized with a violent rigor, and passed into a state of high fever, with sleeplessness and delirium at night. On the third day, the general condition was grave: the fever acute, pulse 120, skin dry, face shrivelled, eyes hollowed, respiration embarrassed, bronchitic râles on auscultation; no abdominal troubles, save diarrhœa. The uterus was then washed out with a 1 to 200 solution of carbolic acid, which brought away some blood clots, and blackish, fœtid *débris*. In the evening, her condition being unimproved, the uterus was again washed out. In the space of half-an-hour she had three successive syncopes. There was relaxation of the sphincter. Night sleepless. On the fourth day the symptoms were less acute, but in the evening she had another rigor, more violent than the first, lasting half-an-hour, and accompanied with intense dyspnœa. From that day, however, she rallied. The intra-uterine douche was applied, by means of a double current catheter, up to the ninth day, at first three times, and then twice daily. At the same time, tonics and sulphate of quinine were administered. Albumen was never found in the urine. The lacteal secretion never disappeared.

The cause of all the mischief in this case was set down to uterine inertia; and it was held that the uterine douche of carbolised water was the best treatment, whether it acted only locally or specifically against the puerperal septicæmia.

In the second case the woman, also a primipara, aborted at the fifth month. Twin fœtuses were discharged, and one placenta was removed, prior to admission to the hospital. On the fourth day the fœtid *debris* of a placenta began to come away, and it was only then that the physician was apprised of the above facts. Fearing the occurrence of symptoms similar to those in his first case, M. Lalesque for four days carried out the intra-uterine douche treatment, after which time the lochia were quite sweet.

In conclusion, he urges that the various evils said to follow on the use of this method, such as hæmorrhage, peritonitis, &c., have not occured in his own experience, and need not if due caution be used in the introduction of the instrument, and great gentleness in the injection of the water.—*La France Médicale.* No. 3. 1880.—~~G. S. M.~~ Glasgow med. Journal

Administration of Ergot in Labour.—Dr. Glynn Whittle (*Dublin Journal of Medical Science*, February, 1880) discusses the importance of caution in giving ergot in cases in which labour is not sufficiently far advanced, and the necessity of avoiding too large doses of the drug, especially in young subjects, who are easily affected by it. "Fifteen to thirty minims are practically useless, but two drachms is the maximum for a single dose, though this may be repeated in exceptional circumstances." He further formulates the following rule:—"Never administer ergot until the labour is so far advanced that it could, if necessary, be finished with the forceps. Should tonic contractions follow, threatening the child's life, but not terminating the labour, recourse may be had to the forceps."

Dr. Whittle also describes another danger connected with the giving of ergot before the birth of the child: when the placenta is morbidly adherent, great difficulty may be experienced in removing it, on account of the firm contraction of the uterus. He mentions a case in which he had this complication to contend with. After the child had been born, the uterus contracted firmly, the os gripping the cord like a vice; this lasted for an hour, at the end of which time, the index finger could, with some pressure, be passed into the uterus, and gradually the other fingers and thumb were introduced, but so great was the muscular contraction, that this had to be done with extreme caution, for fear of rupturing the uterus. The writer says—"Some idea of the difficulty may be conceived when I explain that, during the whole time I was trying to get the placenta detached, the os uteri was contracted round my wrist like an Esmarch's elastic cord."—J. C. R.

Morphia Poisoning in an Infant—Recovery.—An infant about two and a half days old had administered to it a sedative dose which was intended for its mother, and which contained a fraction over one-third of a grain of morphia. Two hours elapsed before the mistake was noticed, and still another hour passed before medical aid was obtained. The ordinary routine treatment, calculated to stimulate and rouse the patient, was adopted, with but little effect. Seven hours after the poison was given breathing ceased, and the heart beat very feebly, but both respiration and the action of the heart were easily re-established by inflating the lungs by the mouth to mouth process and keeping up artificial respiration. This suspension of respiration took place no fewer than thirty-seven times, the difficulty of resuscitating the child increasing on each occasion; the struggle for life lasted over forty-eight hours, but the child ultimately recovered. Dr. J. P. Thomas, the medical attendant, deserved his success.—*Med. and Surg. Reporter.* 31st January, 1880.

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ON INFLUENZA: ITS SYMPTOMS, VARIETIES, AND CAUSES, FOUNDED ON SIX YEARS' EXPERIENCE OF THE DISEASE.

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In the last number of the *Glasgow Medical Journal* for the year 1877, I gave an account of the influenza which had been prevalent in this locality during the years of 1874-75-76. The cases to which attention was chiefly drawn in that communication, were distinguished by their protracted character and the peculiar debility of the nervous system which resulted. The fact that, in many instances, these sufferers from influenza were confined to bed from two to six months, and only perfectly recovered after many months more of slow convalescence, sufficiently attests the serious and tedious nature of the illness. As regards the nervous debility induced; this was very prominent through the whole course of the complaint and manifested itself in various ways, but was specially notable during the later stages in giving origin to remarkable cardiac symptoms and signs, such as—irregular action, intermissions of the pulse, sense of sinking and even complete syncope, hesitating systole, feeble first sound, mitral systolic bruit, and in at least three cases, cardiac dropsy. The loss of tone in the muscular walls of the heart which was occasioned by, or at least associated with, this disorder of the cardiac nerves, seemed to permit of dilatation of the chambers. In the paper referred to, the influenza was described as *endemic*, thereby implying the existence of local causes, and there can be no doubt, that the long prevalence of the complaint in this neighbourhood and the protracted course of the cases, were in great measure due to local causes. These will be referred to in the sequel.

During the last three years (1877-78-79) cases of influenza have still been very numerous, and have displayed great variety in degree and duration, as well as in type. The object of the present article is to record the further results of observation, while they are fresh in the memory, and to add some reflections which have been suggested by a study of the complaint.

The symptoms of influenza fall into three groups. I. Symptoms of depression of the nervous system. II. Pyrexial symptoms. III. Catarrhal symptoms.

I. SYMPTOMS OF DEPRESSION OF THE NERVOUS SYSTEM.—When the poison of influenza acts upon the body, the first signs are those indicating depression of the nervous system. These are followed by pyrexial and catarrhal symptoms. During recent observation, *slight* catarrhal symptoms were usually present before the pyrexial symptoms, but they acquired greater prominence after the feverish reaction had set in. Occasionally the catarrhal symptoms were *nearly* absent in the whole course of the case. The depression of the nervous system is not confined to the outset. It may be obscured by the pyrexial and catarrhal symptoms, but it is usually quite recognisable throughout, and may be regarded as the essence of influenza. This condition of the nervous system is distinguished by certain peculiarities, some of which are *general*, and others *local*.

(*a*) *General.*—A remarkable and unaccountable debility which affects both body and mind, and which is not followed by the development of symptoms characteristic of other diseases. Occasionally this depression comes on very suddenly and sometimes passes off rapidly not to return again. Much more frequently the affection of the nervous system remits, or intermits, as in most of the serious and in all the protracted cases of the complaint relapses take place, between which the patient is able, in great measure, to throw off his languor and debility. Again, the depression of the nervous system, characteristic of influenza, is greatly affected by weather, and particularly by weather changes. Thus, for example, on a bright, clear, dry day I have known a patient suffering from the protracted form of influenza exhibit an amount of energy and elasticity which, when compared with his condition on the previous day, was quite surprising. The occurrence of increase in the nervous depression, on the same days, in various patients simultaneously suffering from influenza, affords the best proof of the connection. Observations of this kind were far too numerous and striking to admit of explanation by mere coincidence.

The general peculiarities of the affection of the nervous system in influenza teach that the poison which causes the complaint frequently acts, so to speak, by retarding or obstructing the flow of nerve force, rather than by destroying it; although, in cases where the complaint is of long duration, there is no doubt a great and real loss of nervous energy, particularly in certain portions of the nervous system.

(*b*) *Local.*—Various local neuroses occur in the course of influenza, and become specially prominent in the later stages. Neuralgias, hyperæsthesia, motor weakness, spasm, disturbance of the nerves which convey sensations of temperature, and vaso-motor disturbance. These affections of the nerves are peculiar in their close association with the condition of the nervous system as a whole (coming on and going off as the waves of general depression rise and fall), and also in their local connection with the catarrhal affections, in whatever portion of the mucous membrane these are situated.

II. PYREXIAL SYMPTOMS.—The pyrexia of influenza receives a strong complexion from the general depression—it is adynamic. The pulse, although quick, is soft and weak. The temperature in the uncomplicated cases which have been observed here, rarely exceeded 103° Fah., but in a few cases, where the seizure was sudden and the vital powers vigorous, a temperature of 106° Fah. was registered. The form of the fever was various. In some of the severe cases the fever was continued, with some slight remissions, for from two to three weeks, and then it became markedly remittent. In other cases it took the form of remittent fever from the first, and after some weeks became intermittent. In other cases still, it was distinctly intermittent from the beginning. It may here be added, that as respects *degree* and *duration* of the influenza, all grades were observed, from the sudden and acute to the extremely chronic.

III. CATARRHAL SYMPTOMS.—They had their seat in the various parts of the respiratory and alimentary mucous membranes. The conjunctiva, the frontal and nasal cavities, the pharynx, the upper part of the trachea and glottis (causing violent spasmodic cough), were common situations. The bronchial mucous membrane was not very frequently attacked unless previously diseased. Of these situations the pharynx was most commonly affected. In the alimentary tract of mucous membrane, catarrh of the stomach, of the ducts of the liver, of the small intestine, of the lower bowel and rectum, occurred.

The catarrhal symptoms, in whatever region situated, were manifestly a part of the general illness. This was shown by their return or increase when the relapses took place; their disappearance or abatement at the intermissions. The catarrh of influenza is therefore entitled to be called a specific catarrh, in the same sense that the catarrh accompanying Hay asthma is specific. With regard to the appearance of the mucous membrane, when the catarrhal affection is situated where it can be examined by the eye, as in the throat, it would be too much to say that they are such as to enable one to recognise the specific catarrh of influenza; but sometimes they are very characteristic—viz., a general redness of the pharynx and of the pillars of the fauces, with a certain degree of tumefaction of the mucous membrane covering these parts. The tonsils are not generally swelled. The redness is not so dark in hue as in scarlatinous sore throat. Sometimes, in a sharp case, the epithelial covering becomes somewhat broken up, giving a rough and dull appearance to the surface of the mucous membrane. In more chronic cases the throat is seen to be covered with tenacious mucus, greyish-white or yellow. Remissions and intermissions in the catarrhal process in connection with the general illness (as just indicated) help to distinguish the character of the catarrh. Moreover, there is frequently a peculiar irritation of the nerves of the part affected. Thus, *severe* pain is often complained of in the throat which the appearances (as just described) do not explain; and in a few hours, or less, with no change in the appearances, the pain may be gone. In short, *the seat of the catarrh is very often the seat of a neuralgia.* Intermittent neuralgic pain in the region of the stomach is very common in gastric influenza. Again, the severe racking cough that is frequently incessant for some hours, may be totally absent for a still longer series of hours.

It has been remarked that few complaints exhibit so many different phases as influenza, and this is not a matter of wonder when it is remembered that the "elements" of the disease are liable to such diversity—the nervous depression is very variable in degree—the fever of influenza is not only variable in degree, but also in form, it may be continued, remittent, or intermittent—the catarrh is very variable in its seat and in its severity, and may even be entirely absent.

In arranging our observations, we shall adopt the following division:—I. A sketch of the phases of influenza that have been recently observed will be given, by relating shortly some illustrative cases. II. General observations upon the character of the influenza, with remarks on certain of the more striking and peculiar symptoms. III. The causes of influenza, particularly the local causes that give rise to its *endemic* prevalence.

I.—On the Phases of Influenza, with Illustrative Cases.

In reviewing the cases of influenza that came under observation during the last three years, and comparing them with those of the three preceding years, the first noteworthy circumstance is the general change which has taken place in the situation of the catarrhal affection. During the three earlier years, of 108 cases of which I have a record, the catarrhal symptoms were recognised to be present in the alimentary canal only in three or four instances. In the course of the last three years, the majority of the attacks were cases of gastric influenza. This change, as far as my observation goes, took place gradually, chiefly in 1878. In referring to the records of influenza, it is interesting to note that the same change in the situation of the catarrhal affection, during the course of the same epidemic, has been observed; and, again, that in certain epidemics the respiratory mucous membrane was chiefly involved, while in others, such as in that of 1840, the alimentary canal was most commonly affected.

The following short history illustrates the change in the situation of the catarrh, and it teaches, moreover, that the portion of mucous membrane affected is not due to individual peculiarities and tendencies. Although, on the other hand, it must be stated that the poison of influenza appears in some cases to be attracted to a weakened or damaged part:—

A family of three children, varying in age from 8 to 5, had, in the course of two years, several attacks of the prevalent influenza. On these occasions, the three children began to complain about the same time (sometimes one might be a few days in advance of the others). The symptoms, common to all, were remitting or intermitting feverishness and some catarrhal affection. The seat of the catarrh varied. On the first occasion, in the summer of 1877, the mucous membrane of the pharynx was reddened, swelled, and covered with tenacious mucus, more or less pain being complained of in swallowing. The illness lasted some weeks. At a subsequent attack, six months later, the catarrh was situated at the top of the windpipe, and the three children had then paroxysms of severe coughing, occurring chiefly in the night and early morning, and tending to end in vomiting—in short, mimicking hooping-cough. The general pyrexial symptoms had the same character as on the first occasion. Again, in August, 1878, after some months of perfect freedom from illness, all the three children began to exhibit symptoms of intermitting feverishness—slight chilliness, alternating with burning hands and faces and subsequent perspiration. Accompanying these symptoms were those of catarrh of the stomach and bowels, pain and loose evacuations mixed with mucus. These symptoms kept coming and going for some weeks—two or three days better, then worse for a day or two.

These cases further exemplify what was abundantly proved by numerous instances—viz., that one attack of influenza did not protect against another—that, on the contrary, a bad attack of influenza seemed to render the individual more prone to the malady. This circumstance was referred to, in my former article, as an evidence of the *endemic* nature of the illness, as it is generally stated in the standard works regarding *epidemic* influenza, that one attack protects the individual from another attack during the course of the same epidemic.

Under the following headings will be arranged some illustrative cases of the different phases the influenza assumed—

(A.) Acute cases of influenza without complications. (B.) Cases where the catarrhal affection had its seat chiefly in the respiratory mucous membrane (including in this the buccal cavity and pharynx). (C.) Cases where the alimentary mucous membrane was affected. (D.) Sub-acute and chronic cases where catarrhal symptoms were almost or entirely absent. (E.) Cases of influenza complicated with affections of internal organs.

Some of the cases about to be related might be called by other names, but they are here brought under the title influenza, because it is believed that they were all the result of the same kind of poison in the atmosphere. As it is quite impossible to state all the circumstances and surroundings of each of these cases, an investigation into which led to this conviction, it follows that any statement of the grounds of the opinion—viz., that these cases had all the same origin, must of necessity be very imperfect, and cannot greatly impress the reader, except in so far as it is corroborated by his own observation of similar cases. Whether the differences between the cases were due to the concentration of the poison, or to its activity (dependent upon atmospheric conditions on the one side, or to the susceptibilities of the individual affected, on the other), or whether the differences depend on progressive development of the poison itself, are questions which we shall not at present attempt to discuss.

(A.)—*Acute Cases of Influenza without, or almost without, Catarrhal Symptoms.*

Such cases were not very common, and they were usually of short duration; but they were remarkable from the suddenness and severity of the onset. The two following cases furnish examples:—

Case I.—In August, 1878, a gentleman aged 58, got up in the morning and went into his garden before breakfast, in his usual very robust health—after breakfast he suddenly felt extremely weak and ill, and very soon vomited. It was with the utmost difficulty he got up stairs and into bed. Then he shivered violently. On visiting him in the afternoon about three o'clock, he expressed himself as feeling much better than two hours previously; but he was then extremely flushed, had a severe headache, and great heat of skin (owing to an accident to the thermometer I could not take his temperature). By the evening the patient was pretty comfortable. On the two following days he kept his bed and had a temperature, at the time of my visit, of 101° and 100° respectively. After this, with the exception of some debility, he was free of all symptoms of the complaint. It need scarcely be added that there was nothing in the shape of *ingesta*, either in this or in the following case, to throw any doubt on the cause of the attacks.

Case II.—One afternoon, in the middle of September, 1878, a boy of six years old was in Helensburgh with his father, apparently in his usual health. While driving home (two miles distant) he lay back in the carriage and complained of weakness. He was cold and looked stupified, and on reaching home he was carried to bed. He could not then answer when spoken to; and after being in bed some time he became delirious. On visiting this little boy about seven o'clock same evening, his parents told me that he was decidedly improved in consciousness, as he could answer yes or no to a question. His pulse was very rapid, and the thermometer in the axilla registered 106° Fah. His tongue was moist and there were no other symptoms. In a few hours after my visit he was much better, and slept fairly well during the night. On the two following days he was slightly feverish and had a little mucous diarrhœa, but was not confined to bed. Thereafter he was quite convalescent. About three weeks before this boy's illness his two younger brothers had similar attacks, not nearly so violent, but more prolonged from there being at least one relapse before convalescence was complete. In these cases the symptoms of catarrh of the bowels were more decided. The nurse of these children had also at the same time a most typical attack of influenza.

(B.)—*Cases in which the Catarrhal Affection had its Seat chiefly in the Respiratory Mucous Membrane (including in this the buccal cavity and pharynx).*

These cases were the most common of all, and exhibited every degree of severity and duration. The following sketch represents a very usual form of attack. An individual would be suddenly seized with shivering, followed by pyrexial symptoms and complaint of sore throat. On examining the mucous membrane of the pharynx, the pillars of the fauces, and perhaps the velum, would be seen much redder than natural, and considerably swollen. On the next day, the cervical glands, especially those situated in the upper part of the neck, at the anterior and posterior borders of the sterno-mastoid muscle, might be swollen and painful to the touch. Very severe pain might also be complained of in the situation of the inflamed mucous membrane, which would intermit in a striking manner, without any corresponding alteration of the appearances.

In another day or two, the irritation of the mucous membrane would descend to the top of the larynx (or it might begin there at the first), and then would ensue violent paroxysms of coughing, usually worst during the night and early morning. This condition of matters would probably continue with remissions or intermissions, both of the general and local symptoms, for two or three weeks, when slow convalescence would set in.

This is a description, in a general way, of the very common cases. The examples about to be given in detail, although less common, are not exceptional. They have been selected chiefly for the purpose of bringing into prominence the *character of the poison.*

Case III.—A gentleman, aged 40, complained one afternoon of feelings of general depression and slight sore throat. On the following morning the throat was more complained of, and he had a temperature of 101°, which increased towards evening to 102·5°. The pharynx was of a deep red colour. There was no swelling of the tonsils and no exudation was visible. On the third day a considerable quantity of dark green decomposed mucus was expectorated by hawking and coughing, processes which caused much pain in the throat and upper part of the trachea. On the fourth day the throat symptoms abated. There was less pain and less clearing up of mucus, which was more natural in appearance, but there was considerable general depression and the pulse was weak. Glows of heat were frequent and the temperature varied from 100° to 101°. By the sixth day the temperature was normal and all the local symptoms gone; but debility of the nervous system and sensitiveness to cold continued for some time.

Case IV.—A girl of 12 years had general symptoms of influenza in a mild degree--cold feelings alternating with bursts of heat. The mucous membrane of the pharynx was redder than normal, somewhat swollen, and covered with whitish tenacious mucus. She had paroxysms of cough wakening her up during the night. This state of matters continued for about a fortnight—not sufficient in degree to confine the patient to bed—when an aggravation of the symptoms occurred. She had decided shivering, and became feverish, the temperature rising to between 101° and 102° Fah. White spots appeared on both tonsils, with some swelling of these glands. There was a rash over the upper part of chest and neck in the form of red spots and small patches of irregular shape not raised above the surface. On the following day the feverishness had nearly subsided, the rash was quite faint, and the appearance of the throat had improved. On the 4th day the patient was so far convalescent and got out of bed, but the tendency to shiver and have glows of heat continued for fully another fortnight, and although the paroxysms of coughing were arrested by the more acute attack, the mucous membrane of the pharynx remained raw and covered with excessive secretion for some time after.*

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* During the last two years cases of sore throat have been very numerous where the tonsils were covered with white or yellow spots, and, in some cases, patches of larger size. These cases were always accompanied with considerable general illness, and often with striking debility, both during the existence of the throat symptoms and subsequently. The patches in the instances referred to were not of a sufficiently membranous character, nor were the general symptoms so grave as to warrant the name of diphtheria; but the observer could not avoid the conclusion that the relationship between these cases and true diphtheria was very near. Judging from descriptions in the Medical Journals, cases of this sort have been common of late in various parts of the country under the names of spreading quinsy and infectious sore throat.

CASE V.—Mrs. G., aged about 30, is of rather a nervous temperament, but usually in excellent health. In the month of March this lady had a similar sore throat to Case III, and about the same degree of pyrexia; but after the throat was pretty well, she complained of a part of the gum adjacent to the front teeth, on the right side of the lower jaw. The mucous membrane covering this part was swelled, *whitish in colour* and tender to the touch, and was the seat of acute, but intermitting pain. When the pain was present, the inflamed membrane was extremely sensitive to the touch. This whitish patch, surrounded by a margin of red, extended to the middle line, but did not cross it. The patient was confined to bed for about three weeks with slight intermitting feverishness and very decided nervous debility, which also varied in degree. The gum retained the same appearances, although these became gradually less distinct. The pain came and went, but grew less acute. This patient slowly improved, and had only been partially out of bed for a week when labour came on, and she was delivered of a child at the full term. No complication or untoward event occurred, but her recovery was retarded by a recurrence, in a less degree, of the symptoms already described. The consequent weakness of the nervous system (notwithstanding that the patient took her food well, and was able to nurse her baby) diminished very slowly until she was able to leave Helensburgh for Moffat, where she threw off the peculiar debility with a rapidity which surprised herself extremely. Her recovery was completed in the summer during two months spent on Loch Long side.

On seeing the patient after her return here in September, I observed the same part of the gum slightly tender looking, and she related to me that if she overtired herself, or was long exposed to cold, she experienced slight creeping feelings down her back, and the gum immediately became painful.

CASE VI.—Miss C., aged 40, robust, and of very active habits, had been for two to three years in constant attendance upon a sister who was suffering from paralysis. Miss C. was, in consequence, in an exhausted state of health.

For ten days before my first visit she had been suffering from severe chills and irregularly intermitting pyrexia, along with some sore throat. The throat felt raw and swelled, and during the previous two days she had complained much of her gums and the roof of her mouth. When seen by me, 19th May, 1879, the whole mucous membrane covering the gums was swelled and red, and both upper and lower gums had numerous white or greyish-white patches slightly raised above the surface, irregular in shape and about the size of threepenny pieces. The epithelial layer was quite intact, so that the whole surface, including the parts which were white, was smooth. On the following day the epithelial layer over the patches began to break up, at the edges first, and as it frayed away the patches grew smaller, and in a few days disappeared. But they were reproduced, although not to the same degree or extent. Very acute pain was experienced at times in the gums. The tongue was swelled and sore, but its appearance was not remarkable. This patient, although extremely weak, was never completely confined to bed, although I urged her to keep her bed. She slowly improved to a certain extent, and soon left Helensburgh for Moffat and other places, and I did not see her again until 27th August. Then, although much stronger, she still complained, and had never been free of slight shivers and heats, *heart-sinkings*, and nervous weakness. Her gums were still swelled, were marked with whitish ridges, and were occasionally the seat of great pain.

It may not be out of place to remark here, that in numerous instances, where the patient refused to give in and go to bed as advised, I have witnessed similar consequences—namely, that although the patient might improve to a certain extent, the complaint held on with tenacious grip for many months, and, indeed, for two or three years. In many of these instances the patient was ultimately compelled to betake himself to bed; in some, this illness seemed to pave the way for the inroad of serious organic disease; in others, although the complaint was in the long run shaken off, much bad health was endured, and who shall say that the vital powers were not permanently injured by the protracted conflict?

CASE VII.—Mrs. P., a healthy active woman, aged 67, took suddenly ill on the 17th May, 1879, with severe shivering, after being violently overheated in running to catch a conveyance. For four days the case presented the usual symptoms of smart influenza. She had a raw sore throat, sickness and vomiting, and could take nothing these days but iced water. She had a high pyrexia, which remitted during the first half of the day. At intervals there were great glows of heat. On the fifth day there was an abatement of the fever symptoms, but it was then first discovered that the gums were covered with a white coating—chiefly the upper gums.* The most prominent part of the gum was most covered, giving a patched appearance. The whiter parts would measure about half an inch, both in length and breadth. They were, when first seen, quite smooth, as if the epithelial layer of the mucous membrane had been raised without its surface being interfered with. By next day the patches became more sharply defined. In the course of the next two days they became rough on the surface, and even whiter in colour, resembling pieces of white blotsheet. The edges became ragged, and thus slowly frayed away, leaving the mucous membrane swelled, redder than natural, and apt to bleed if touched. These patches were afterwards reproduced, but much more faintly. By the eighth day the temperature had fallen to the normal point. During the second week there was very little fever, the thermometer was often below the normal. The pulse varied from 100 to 108. The patient was deeply depressed, both in body and mind. She took small quantities of milk, beef tea, and brandy. In the course of this week the mucous membrane of the tongue and that lining the cheeks and lips became swelled, and formed into ridges, the crests of which were coated with a white covering similar to that on the gums, but much thinner. The urine was several times examined for albumen, but no trace was found. During the third week the temperature was frequently fully 100° Fah., and rarely as low as normal. The pulse varied from 88 to 116. Small white patches were observed to appear on the back of the pharynx and at the root of the uvula. A rise of temperature was followed by an increased whiteness of the ridges on the tongue, &c. The patient had occasional slight shivers, was very sensitive to the least exposure, and continued much depressed. She gradually took more nourishment. This condition of matters continued with very slow and intermitting improvements in the general state, and with gradual abatement of the appearance in the mouth until the 29th of June, by which time the patient had been six weeks in bed, and was still quite unable to rise without assistance from the nurse. On the 29th June, without any known cause, the pyrexial symptoms returned, a temperature of 101·4° being recorded. On the following day the thermometer rose to 103° Fah., and a scarlet rash began to appear over the whole surface of the body. On the 1st July the highest temperature recorded was 104·2°—the lowest was 100·8°. The eruption was fully out, and resembled the most brilliant rash of scarlet fever. It continued for a number of days, slowly faded, and was followed by most profuse desquamation of the skin, which was not complete till the middle of August. In consequence of my absence from home, Dr.

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* The patient did not complain of her gums; and from the formation of her mouth, they could not be seen without raising the lips, thus rendering it very easy to overlook this appearance.

M'Ewan attended the patient during the attack. The rash, he considered, had all the characters of a typical scarlet fever rash, but from the absence of sore throat or renal affection—from the history of the preceding illness—from the fact that the patient had been *isolated* for five weeks with a professional nurse, and that, moreover, there had been no scarlet fever in the neighbourhood, he concluded that the patient was *not* suffering from an intercurrent attack of scarlet fever. The sequel proved that this view was correct.

I shall here append a note of the temperature during the four days that the rash was at its height, taken at different times of the day by a nurse from the Glasgow Training Home for Nurses, whose accuracy in this was frequently tested. It will be observed that there was a very decided remission in the pyrexia on the 3rd of July.

July	2nd.	3rd.	4th.	5th.
Morning,	103·4°	100·2°	102·8°	100·2°
Mid-day,	102·4°	100·4°	103·6°	100°
Evening,	101·4°	100·4°	102°	100·2°

From the 5th of July the temperature gradually, but intermittingly, fell to about 99° Fah., after which it varied between 99° and 100° for the next fortnight.

From this time Mrs. P. very slowly gathered strength, and was able (although still weak) to leave home for Dunoon on the last week of September. On the short journey thither, owing to her sitting on the deck of the steamer, she got a chill, and in two days after she became very feverish and a scarlet rash once more covered the skin. It was less intense than formerly, but was followed by complete desquamation. She lay in bed for nearly four weeks, and, when sufficiently recovered to stand the journey, she returned to Helensburgh. I visited her on the 15th October, and observed that desquamation was scarcely completed. She was, however, notwithstanding the relapse, very much stronger than when she left Helensburgh. This was specially notable as regarded the nervous system. The mucous membrane of the pharynx and gums was red and soft, but she made no complaint of pain. When I now write, March, 1880, this patient is quite recovered.

(*To be Continued.*)

CASES OF POISONING WITH THE SEEDS OF THE CASTOR OIL PLANT.

By ROBERT PARK, L.F.P.S.G., GLASGOW.

ON the 16th February of this year, I was sent to attend Edward M'Guire, æt. 30, labourer, and Mrs. M'Guire, æt. 60, housewife, both living at 80 Bridgegate.

Edward was sitting on a stool with his body well bent over on his thighs. He had an anxious expression of face, tongue very clean and perfectly normal in regard of colour and condition of mucosa. Pulse rapid (90) but feeble. He stated that for the last two days he had been frightfully purged and he felt as if he would die. The dejecta had latterly been yellow, like egg yolk, or of whitish slimy character. There was great pain in the abdomen.

Mrs. M'G. stated that she also had been severely purged, but not to the same extent—that she felt as if there was a hot ball in her stomach, and her heart palpitated "dreadful." The objective symptoms were not noteworthy.

I ascertained that there had been no cases of a similar kind on the stair, and therefore directed special inquiry as to the food which they had been taking. This elicited the fact that Edward having been down at the quay, looking for work, picked up a handful of "beans." Of these he ate, as nearly as he could calculate, twenty-four; and of the six which he brought home with him, the old woman ate three. The remaining three, after a search, I obtained and discovered to be the seeds of the castor oil plant.

Remarks.—These seeds are not unlike beans—particularly of the haricot and lupin order. The plant—*Ricinus Communis*—from which they are obtained, belongs to the Euphorbiaceæ, and its fruit is a three-celled capsule covered with spines, each cell containing one seed. The seeds weigh from 2 to 8 grains, are longish oval, about 3 lines in breadth, 4 lines long, and 1½ lines thick. They are somewhat flattened on one side, and on the other have a central slightly elevated ridge traversing their length—the scrobiculum. At one end they have a protuberance—the caruncule or strophiole—which may or may not be found attached to them as met with in commerce. When not present a rough scar, not a depressed one, indicates the spot where it should be. On transverse section a hollow cavity is found to exist in most dried seeds.

The testa is a thin, ligneous, brittle substance, brownish-black outwardly and greyish internally, and beautifully marbled with grey, reddish brown, or white spots and streaks. This removed, a thick, fleshy oleaginous nucleus is exposed with which is a large dicotyledonous leafy embryo.

This nucleus it is which yields the castor oil of commerce. Christison says it amounts to "69 per cent of the seed when dry; contains 46·2 per cent of fixed oil, 2·4 of gum, 0·5 soluble albumen, and 20 of coagulated albumen; but, *it must also contain a peculiar acrid and purgative principle not yet discovered*, for it is powerfully active after expression of the oil;" which, when good, should exert no other action than that of a mild but effectual laxative.

With regard to the action of the seeds, the same author states "they are powerfully drastic, cathartic, and irritant, and are said even to have proved fatal to man when taken to the extent of *twenty* seeds at once."

In a footnote in Royle and Headland's *Materia Medica*, it is stated that Dr. Royle was once called in a great hurry to the hospital boat, several men having exhibited symptoms of poisoning or cholera. It was found they had been eating "Indian filberts," which inspection revealed to be capsules of the ricinus communis. The majority recovered rapidly, but three of them suffered severely and were not discharged from hospital for some time.

REPORT OF THE AURAL WORK DONE IN THE GLASGOW ROYAL INFIRMARY, DURING A PERIOD OF TWO YEARS—VIZ., FROM NOVEMBER 1ST, 1877, TO NOVEMBER 7TH, 1879.

By JAMES PATTERSON CASSELLS, M.D., M.R.C.S., Lond.,

Surgeon to the Glasgow Dispensary for Diseases of the Ear; late Aural Surgeon to the Glasgow Royal Infirmary, and Lecturer on Aural Surgery in the Royal Infirmary School of Medicine, Glasgow; Membre-Correspondant de la Société Royale des Sciences Médicales et Naturelles de Bruxelles, &c., &c.

(*Continued from Page 215.*)

(*With Two Woodcuts.*)

Ceruminal Accumulation.—The blocking up of the meatus by cerumen caused deafness more or less complete in 70 patients out of the whole number—491. Of these cases, 48 occurred in males, and 22 in females. Analysing them further, we find that there were—

8 cases in males and 6 in females over 5 years and under 21.
32 „ „ 13 „ „ 21 „ „ 60.
8 „ „ 3 „ „ 60 „
48 22

Six male patients had the accumulation in the right meatus alone, 11 in left alone, and in 32 both meatuses were found to be occluded. In the females, 8 were in the right meatus alone, and 6 in left alone, while in 8 cases the accumulation occurred in both canals. The duration of the deafness in these cases was variable, ranging from 1 day to 20 years. The character of the deafness in most cases was variable—"it came and went," its coming and going being equally sudden; these were the chronic cases. Doubtless the erratic character of the deafness from which those patients suffered counselled delay, till complete and lasting closure of the canal compelled them to seek help. Others, again, the more recent cases, had complete and lasting deafness from the outset. Some of these patients complained of having noises of various kinds in the ears and head in addition to the deafness. Others had severe pain in the ears. Some had cough; others gastric irritation amounting to vomiting—veritable ear cough and ear vomiting. How the presence of cerumen in the external auditory meatus can cause the acts of coughing and vomiting, even syncope itself, is explained by the close connection which the pneumogastric nerve maintains between those important organs, the ear, the throat, the heart, and the stomach. The most constant symptom, however, which marked out these cases at once as cases of ceruminal accumulation was, on the one hand, the variable character of the deafness—complete deafness at one time and perfect hearing at another—and, on the other, in the more recent cases, the sudden and complete deafness, without any previous defect in the hearing. These cases were not, however, all simple ones of deafness due to cerumen alone. Many were complicated by structural changes, both in the ear in which cerumen was found, and in that in which none existed. In the former cases, the defect of hearing was only improved by the removal of the ceruminal mass, when the tissue changes were slight and unimportant. Where it was otherwise, then, little or no improvement took place by the removal of the cerumen from the canal. These cases were then considered on their merits, to be further treated or dismissed, as it seemed good.

Few of them, however, merited the latter alternative, and many were treated for a time with ultimate success, even to the restoration of their hearing. Many cases, also, came with a history of complete deafness for many years in one ear, and sudden and complete deafness in the other one, of only a few days' duration. In these cases, usually no cerumen was to be seen in the ear longest deaf, while it was found in abundance in the more recently affected one. Removal of the cerumen at once restored the hearing, to the great joy of the patient, who, in many cases, feared the total loss of the hearing. Other cases, again, which were full of interest, were those persons who had heard quite well all their lives till within a few days of their appearance at the infirmary, when they had become suddenly deaf. Examination of these cases showed usually that one meatus did not contain cerumen in an abnormal quantity, and that the membrana tympani showed no defect either of form or structure, while the other ear canal was quite closed up by the ceruminal mass, both ears, however, being deaf to ordinary speech. This apparent mystery was cleared up by the use of the diapason (an ordinary tuning fork will do as well). When this instrument in vibration was placed on the patient's head, its vibrations were always heard alone in the ear whose meatus was blocked up, while it was not heard at all in the one, the meatus of which contained little, or only a normal quantity of cerumen, nor even heard in this ear when its meatus was closed like the other by the finger tip. In such cases, it was quite beyond doubt that we had to do with an affection of the labyrinth (inner ear) in which the vibrations were not perceived. Curious to say, however, removal of the cerumen from the plugged-up meatus of the ear, in which the vibrations were heard, not only restored its hearing power, but also the sensation of double hearing to the patient. It was proved in these cases that this sensation of double hearing was an illusion on the part of the patient by applying the tuning fork as before to the vertex. The vibrations were only heard in the ear from the meatus of which the cerumen had been removed, being now, for obvious reasons, much more faintly heard than before its removal.* The masses that were removed from the meatuses of the patients were not always formed of pure cerumen. Many were of a composite character, being made up of cerumen intermixed with broken hairs and epithelial *débris* and other matters, the nature of which could not be distinguished. Some of the masses were removed with great ease, and others required to be softened to effect their removal. In a few cases I removed the mass bodily, and at once, by the aid of a tiny hook. Doing the removal in this way necessitates delicate manipulation and great discrimination as to the selection of proper cases, as well as good illumination of the parts. This mode of removing the mass has many advantages over the syringe and water method—as, for example, you cannot make your patient sick or faint, nor do you irritate the tissues of the organ at all, as is often done in using the syringe and water.

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* Mach and Weber have shown that a large number of the vibrations in such circumstances make their escape by the meatus, and that closing the meatus, either artificially or by cerumen, as in the cases mentioned in the text, intensifies the perception of the vibrations, owing to the fact that they are not only prevented from escaping from the meatus, but thrown directly back towards the perceptive part of the organ.

Causes of Ceruminal Accumulation.—These accumulations arise from many causes, chief among them being the habit of over-cleanliness which possesses some persons, and by which they are induced to make attempts to clean out the meatus by such means as the point of a wet towel, bent hair pins, and sometimes even common pins and matches; the circumstances of such patients not enabling them to use the more aristocratic "auralave," concerning which I can say that no instrument has been introduced of late years so well adapted to cause ceruminal accumulation in the external meatus. On the other hand, many cases are also due to structural peculiarities; thus, instead of the cartilaginous portion of the meatus having a direction downwards and outwards, and trumpet shaped, it sometimes has a direction inwards and downwards, the consequence of which is, that the cerumen tends to run backwards and inwards instead of downwards and outwards, as is the case in a normally formed meatus. Most persons have experienced the sensation of tickling at the orifice of the meatus which causes them to carry their finger tip to the orifice of the canal involuntarily, and to twirl it in that orifice with the result of bringing away a greater or less quantity of cerumen. This is nature's mode of preventing a ceruminal accumulation.

Natural History of a Case of Uncomplicated Ceruminal Accumulation.—Owing to one or other of the foregoing causes, or others that have not been mentioned, the surplus secretion of ear wax ceases to be removed in the natural way above described. It then goes on accumulating in the canal, it may be for months or even years, until the meatus becomes nearly, but not quite filled. The mass in the meatus at this time may not cause any defect of hearing, even although there only remains a small chink for the passage of sound to the deeper seated parts of the organ. By and bye, it may be during the prevalence of continuous wet weather, or owing to the accidental entrance of water into the meatus, or a change in the position of the mass, this chink is closed up, and more or less deafness immediately ensues.

Various Modes of Removing Ceruminal Masses.—Sometimes help is sought at this juncture, and the mass, which is easily distinguished through the ear speculum, is removed by the surgeon with a syringeful of tepid water; the syringe being the same as was recommended in a former paper for the removal of foreign bodies from this canal (see Fig. 7, *Journal* for March). When help is not sought at this time, it may be owing to the fact that, in a few hours the chink has reopened and the hearing is restored. As I have already said, this going and coming deafness may be repeated for several years until the case becomes chronic. Then, although the mass is as easily recognised as it was in its earlier stage, it is now much more difficult to remove, and needs sometimes to be softened with an alkaline solution, such as 20 per cent watery solution of bicarbonate of potash. After frequent instillation of this alkaline fluid the mass becomes soft again, and is then easily removed by the syringe and tepid water as before. But these cases are not always uncomplicated. Sometimes the mass lying at the bottom of the meatus begins to swell, and by eccentric pressure upon the walls of the meatus sets up an inflammation in them which leads to swelling of their soft tissues, and to a closure of the canal outside of the ceruminal mass. In this state the parts are extremely tender and sensitive to the slightest touch. Oftentimes there are granulations, due to the irritation of the enclosed mass, sprouting out between the inflamed tissues and complicating the case still further, so that there is a difficulty at first sight in saying what its nature may be. The difficulty in making a diagnosis in such circumstances lies in the fact that the slightest touch of the ear speculum on the inflamed tissues gives rise to so much pain that the patient, however willing, is unable to allow of the examination being made. Nor is it easy to ascertain the precise state of the structures, that are hidden from sight, by the most careful auscultation, it being as painful to the patient and difficult to the practitioner to apply the otoscope (or auscultating tube) to the inflamed tissues as it was to apply the ear speculum. It is these cases of cerumen which try the courage of the patient as well as the skill of the practitioner, for, apart from the difficulty of diagnosing the presence of a ceruminal mass, it is sometimes impossible to remove it when its presence has been ascertained beyond doubt. The mass being hard, perhaps of years' duration, resists the action of the very small and weak stream of water which is able to effect an entrance through the narrow chink that exists between the swollen walls of the canal, and thus, even by the most delicate manipulation, the surgeon may fail at the first sitting to remove the irritating body. In such a case there is nothing for it sometimes but to make free incisions into the congested tissues, and to apply pledgets of cotton wool, soaked in some hot bland oil, such as oil of almonds, and wait for the result of the incisions and the emollient application for twenty-four hours. Often, however, I have found that with gentleness of touch, I could pass one of Weber's tympanic catheters through the narrow chink into that part of the canal where the mass of cerumen was enclosed. In this way, by a syringe and tepid water, I could bring a delicate stream to play directly upon the mass, and thus remove it gradually without the necessity of making incisions into the congested tissues. In removing a mass of cerumen from a young child's ear, it is well to know that the meatus of the child is generally, but not always, shorter, wider, and straighter than that of an adult, and that less force is necessary for the removal of a ceruminal mass from a child's ear than from the ear of an adult or an aged person. With an adult it is always necessary to make traction on the auricle upwards, backwards, and outwards, in order to straighten the cartilaginous portion of the canal. In this way the stream of water passing from the syringe into the canal, and which must be directed from below upwards and along the inferior wall of the canal, has free access to the ceruminal mass, which is soon dislodged and removed. In the aged, traction upon the auricle, as already described in the removal of foreign bodies from the meatus, is much more necessary than at any other period of life, because of the natural collapse of the orifice of the canal which takes place in the aged. If this precaution be not taken, the mass in the first place cannot be seen, and therefore will not be removed, with results that need not be dwelt upon.

What a Ceruminal Mass can do.—Besides what we have already said, a ceruminal mass can cause abrasion of the epidermic layer of the meatus, and of the surface of the membrana tympani, sometimes even, as in one of these cases, the mass, when removed, is found to have the exact shape of the inner third of the meatus, and of the outer surface of the membrana tympani, coated, moreover, with the whole of the epidermic layer of the parts with which it has been in contact (see Fig. 8). It can also cause intense deafness for many years, leading to serious consequences social and otherwise. It can cause ulceration and perforation of the membrana tympani, even caries and necrosis. It can cause persistent cough or vomiting, which "resists all treatment." Moreover, the failure to recognise the presence of such a mass and to remove it, has led to grave errors in diagnosis, having dangerous consequences.

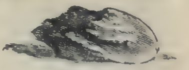

FIG. 8.

Therefore, let no one despise cerumen as a cause of deafness, as is sometimes done. Any one who does so will surely rue it. Never assume that the removal of the ceruminal accumulation will restore your patient's hearing; and in cases of obstinate cough and vomiting, even sneezing and fainting, never overlook the examination of the external meatus. Lastly, in sudden cases of suffocation or choking, from the presence of a foreign body in gullet or wind-pipe, even in some cases of poisoning, let us not forget to avail ourselves of the relations that exist and the power that subsists between these organs and the external auditory meatus.

Eczema, Acute and Chronic.—There were seven cases of eczema, one in a man and six in women. Their ages were between 21 and 60. Six had the affection in both ears and one had it in right only. The acute cases were characterised by great swelling and tumefaction of the tissues of the canal, with an abundant serous exudation. All these cases had a traumatic origin, the disease having been occasioned by a meddlesome picking of the ear with dirty finger nails. Doubtless, this picking arose from a desire to relieve the itching in the parts. They were all aggravated also by errors in diet and by no diet at all; many of these patients being in a state of semi-starvation. The treatment in the acute stage was free purgation, afterwards an opiate at bedtime, and the local application of iodoform to the inflamed surfaces. This acted like a charm. The chronic cases did well by being washed with bran water and afterwards smeared with dilute nitrate of mercury ointment. This, in a short time, removed the swelling and hardening of the tissues which resulted from long continuance of the disease. Some of these patients, even those who were slightly affected with the eczema, had an unbearable sensation of itching in the meatus; this was always relieved by attending to their disordered stomachs, chiefly by the use of bismuth in scruple doses; the itching in these cases being also another evidence of the close relationship and sympathy that exists between the stomach and ear. Constitutional treatment was never called for in these cases.

Abscess and Furuncle.—There were six cases of abscess and furuncle which were treated by free incision and by instillations of hot oil. The practice which pertains usually in these cases of poulticing the ear is radically bad, not because it can do much harm in itself, or cause granulations to arise as some authors affirm, but because it occasions a delay which should not be allowed. Nothing but free and early incision ought to be thought of. The intense pain which arises in such cases is at once relieved by incision of the parts alone; whereas, with poulticing, it is prolonged, if not intensified. Not only does early and free incision cut short these cases of abscess or furuncle, but such a mode of treatment prevents the recurrence of such attacks.

Otitis Externa, Acute and Chronic.—There were six cases of the acute and chronic form of this disease in patients whose ages ranged from 3 to 58 years. Free incision of the inflamed structures was also employed. These were always uncomplicated, and seemed to have their origin in local chills or in wetting of the interior of the meatus. Doubtless, also, the stomachs of the patients had some influence upon these affections. After free incision, iodoform, in fine powder, was applied to the surfaces, and, without exception, the cases did well.

Ulceration and Caries.—There were four cases between 5 and 8 years of age. These cases had all arisen, I believe, from a neglected otitis externa. In some of them the ulcerations were local, in others the whole interior of the canal was ulcerated, and the tissue villous. The general health of these little patients was terribly impaired through bad feeding and bad keeping. The cases of *caries* were also due to the same cause, as were those of simple ulceration of the soft tissues of the canal. In fact, the caries in these cases was just a more advanced stage of the same ulcerative process. Large masses of granulation tissue sprang up from and around these carious parts. Through the centre of these masses usually ran a little canal which led down to the caries. Instead of removing the masses with the *ecraseur*, I passed, in two cases, a fine probe, coated with nitrate of silver, down the canal to the carious spot in the bone, with the result of breaking up the granulations as if a tiny bombshell had been exploded among them. With cod liver oil and chemical food these children soon picked up strength. A thorough good washing of the skin with soap and water also added to their well-being. This, and the local application of iodoform in fine powder, soon brought about a healthy state of the tissues.

Tumours.—One case of tumour of the meatus was admitted to the out-door department of the hospital. When I saw the man, he appeared to be in such a state as made it imprudent to send him home. He was, therefore, admitted to the house, but into the ward of one of my colleagues, where I learned that he died next day. A fragment of the tumour which I removed from his ear showed, on examination, that the case had been one of spindle celled sarcoma. A section of the tumour, made and drawn on wood (by my friend, Dr. David Foulis, Pathologist to the Infirmary), is represented in the accompanying woodcut (Fig. 9). No *post-mortem* examination was allowed.

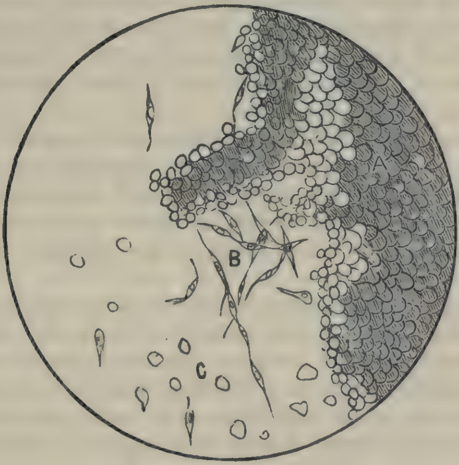

Fig. 9.

Cholesteatoma.—One case of this growth in a male patient, aged 22 years, came under my notice. It presented all the general characteristics of these tumours. The patient was suffering great pain from its presence. Happily it was removed in pieces without much difficulty. For the removal of these masses I have devised a sharp spoon, which is perforated in its convexity, and therefore clears itself in the process of scraping out the mass. This little instrument enabled me to operate upon this patient's case with great ease, and to remove the mass with much more rapidity than with the syringe and water, which I have usually employed in such cases. This case did well.

Concerning these masses I have some remarks to make. Toynbee, whom I have styled elsewhere,* the "founder of aural pathology," called these masses "molluscous tumours," and attributed to them great destructive powers in respect to causing ulceration and absorption of all tissues of the ear with which they came in contact. This conclusion seemed to me to be well founded, especially after I had made a complete and careful study in 1872, of his pathological collection, now in the museum of the Royal College of Surgeons, in London. Since then, however, my own experience has led me to a conclusion different from his. It would be presumptuous, however, in me to say that such a great master of aural pathology was in error, for while he is dead, he yet speaketh to us in his valuable monograph on the *Pathology and Diseases of the Ear*. I will not, then, be so rash as to say he was wrong, nor shall I venture to assert that I am right, but I shall state here the conclusions to which I have come as the result of the observation of many cases of this disease which I have treated during the last eight or ten years.

These conclusions are as follows,—that great destruction in the tissues of the organ of hearing precedes, and is essential to the formation of the cholesteatoma,† and that these masses are not in themselves actively destructive, nor even painful by their presence, until they outgrow the capacity of their tenement.

I shall best explain what I mean by the preceding statements by describing in detail, the natural history of a case of cholesteatoma or molluscous tumour. In all the cases which I have seen, during the above period, there has been, without exception, a history of an ear disease in early life, mostly arising from scarlatina, years before the tumour made its presence known in the ear. In all these cases there was a clear history of a discharge from the ear of long duration; next came a time when this discharge ceased altogether; then a period of shorter or longer duration, in which the formerly diseased ear gave no trouble; at last, however, occasional twinges of pain are felt in the organ that has been so long painless. This pain, once begun in such a case, does not cease, but rapidly increases until the patient is compelled, from excessive suffering, to seek relief. Then, on examination, we find the meatus filled with an amorphous mass of a dirty yellowish colour. This mass, when it is removed whole, exhibits a pearly shining look in its interior, and contains epidermic cells and other *débris*, enclosed in a thin capsular covering. But usually the mass has attained to such proportions as to render it impossible to remove it, except in pieces. Then we find that the mass easily comes away in layers, which have at first a dirty yellow look, but afterwards, on going deeper into its interior, they present a pearly shining appearance, which continues until the whole mass is nearly removed; then the *débris* assumes its former dirty yellow colour. After the complete removal of the tumour, we come to see the extent of the destruction which the original disease in the ear had accomplished, and which Toynbee has ascribed to the ravages of the tumour. These tissue changes are as follows:—Usually the roof and the posterior wall of the meatus are gone, and the mastoid cells are in open communication with the cavity of the tympanum—the membrana tympani and ossicles being absent, of course. Instead, however, of seeing in this chasm evidences of destructive ulceration of tissue, we have in every case found that its surfaces were more or less cicatrised, and that they had the appearance of having been in that condition for some time; the parts which were ulcerated having become so recently, from the eccentric pressure of the cholesteatomatous mass. These appearances would not have sufficed to prove that the pathological changes in the tissues of the ear had had an existence antecedent to that of the tumour, had I not been able to observe the re-growth of such a mass in an ear, from which I had already removed a cholesteatoma. The mode of growth was as follows:—All the interior of the cavity which I have described, as caused by the original disease in the ear, presented a uniform white and glistening appearance. This layer of glistening appearance, in the course of some months, gradually seemed to thicken, and after a time it gave rise to pain, although the mass was not so great as to press upon the neighbouring tissues. On account of its presence causing pain, the patient insisted on removal of the offending material, which presented just the same appearance as these tumours present in general. At the present time, I am observing a case of re-growth of such a tumour, and it has begun in the same way as the one that I have above described. It has now attained, indeed, to such a size as to cause pain in the ear, which had been painless since the former tumour was removed. In conclusion, I regard the molluscous tumour, or cholesteatoma, to be a production of the lining membrane of the chasm produced by the original destructive processes of the ear. Of the exact structure or character of that membrane I have no knowledge.

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* In my Essay on "Conservative Aural Surgery, *Edin. Med. Jour.*, March, 1876.

† I do not overlook the fact that Lucœ has met with a case of this tumour in the middle ear, in a case where neither inflammation of the tympanic cavity, nor perforation of the membrana tympani existed. *Verhandl. der Berlin Med. Gesellsch*, 1 Sitzung vom, 26ten Februar, 1873. (Quoted in Professor Schwartze's excellent and trustworthy *Handbuch der Pathologischen Anatomie*, 1878.) This case, however, does not in any way affect my observations and conclusions, if it does not support them, which I am disposed to say it does.

Hæmorrhage (simulated).—A girl, ill clad and poorly fed, came to the dispensary, accompanied by her mother and aunt, giving a statement to the effect that the girl's left ear had been bleeding at frequent intervals since the previous day; that there had never been anything wrong with the ear before, and that there had been no discharge of matter before the bleeding took place. As evidence of the fact of bleeding, they exhibited to me a dirty white cotton handkerchief, which was stained pretty generally all over with a pale blood stain, as if the blood had been diluted, or had been poor in red corpuscles. On examination of the ear, no abnormality could be seen. There certainly appeared to be a darkish-looking ring, circling the inner extremity of the meatus, near to the membrana tympani. This might, however, have been due to a shadow being cast upon the part by the reflected light. It was a suspicious circumstance at the outset, that there was no appearance of blood clot about the external orifice of the meatus, or in the canal itself. The dark zone to which I have just referred was steadily kept under observation for half-an-hour, and at the end of that time no change had taken place in it, nor had any oozing of blood made its appearance in any part of the organ. Having told the mother of the patient that no blood was to be seen about or in the ear, they again declared, in the most positive terms, that they had seen it coming from the ear themselves on to the pocket handkerchief. The girl at the time was menstruating, and it may be added that she was the only support of a family of six, including her father and mother, all of whom were out of work, she herself working in a printing office for a wage of seven shillings per week. Before sending the patient away, I desired her to come to me at my house the moment the bleeding made its appearance again, and that I would give her five shillings as a gift if she would come and let me see the blood running from her ear. At 8 P.M. on the same day she appeared at my house in company with her aunt. This time she had a fresh cloth, consisting of a half dirty bit of old cotton rag, which was stained in a similar manner, but not so liberally. She again declared that the bleeding had occurred soon after she had gone home, and her aunt corroborated the patient's statement. From the time I first saw her, till she came to my house at 8 o'clock, two hours had elapsed. I now re-examined her ear, and found it to be in the same state in which I had seen it two hours before, and no blood stain nor clot in any part of the meatus, or even upon the auricle. Determined to be at the bottom of the mystery, I kept her under observation for two hours, and at 10 o'clock at night I plugged up her meatus with a pledget of cotton wool, soaked in gum, and drew two ink lines right across the auricle and the cotton wool, parallel to each other, and at a line distance. I then sent her home, with instructions not to disturb the packing that I had put in the meatus, telling her to see me again whenever the blood began to come from the ear; or, if no bleeding took place, that she was to see me after the lapse of a week, at the dispensary. At the end of a week she made her appearance in the dispensary. The plugging had not been disturbed, no more bleeding had taken place from the ear, and she was proposing to return to her work.

Now for my theory. The girl seeing her whole family at home, doing nothing for themselves, and living upon her labour, got tired of providing for them, and determined to have a little rest as well. She simulated this hæmorrhage from the ear, as an excuse for lying in bed. The handkerchief was stained by the menstrual fluid, and shown by her to her parents, in order to excite their sympathy and commiseration; instead of doing that, it caused them to take fright, and to bring her to me at the hospital. When she went home after seeing me at the dispensary, she probably expected that she would get the gift from me that I had promised to give her, if she showed me the blood on a cloth, instead of coming out of the meatus. With that idea in her mind she had stained a fresh cloth in the same way as she had done the first, with the object of showing it to me. The motive here seems to my mind quite clear, but it may be that I judge too severely, and place too low a value upon the girl's *morale*. It seems, indeed, a very curious thing that she should simulate a symptom of ear disease which is not commonly seen, even among the poor people, who have generally bad and neglected forms of ear disease.

(*To be Continued.*)

SALICYLIC ACID IN YELLOW FEVER.

By J. WALLS WHITE, M.D., Glasgow.

Yellow fever being a strictly endemic fever, the opportunities of studying it at home here are of rare occurrence. It is, nevertheless, a subject of interest to us, from the havoc it makes among our sailors who have to frequent those regions where it prevails. The best descriptions of it are from the observations of American physicians, who have frequently to deal with it during periodical visitations to the seaports of that country. It is from the pen of one of these that I quote the following:—"There seems no reason to doubt that yellow fever is a zymotic disease, whose cause is generated by certain local conditions—that is to say, a long continued high temperature, excessive moisture in the atmosphere, vicinity to the sea, or to some river emptying itself into the sea, and organic matter, especially vegetable, in a state of decomposition. The cause must be material, and probably, being of slow transportation, is a microscopic vegetation."

With such a history as to its causation, and such a character as "that there has been no specific found for yellow fever and no abortive treatment," it was with some interest that I availed myself of an opportunity that offered to try the prophylactic powers of salicylic acid in this disease. As to how it succeeded will be best told in the words of my experimenter, who was a shipmaster of more than ordinary intelligence and ability.

The ship he commanded was bound for Rio Janeiro, and my instructions to him were, that if yellow fever was prevalent when he got there, he was to take to himself and give to his crew in their lime juice 5 grains salicylic acid once daily, or oftener if required.

The ship reached her destination in due course, and had been in port for three weeks when the fever broke out (about its usual time in these parts), during the months of August and September of last year (1879). In less than a week there was scarcely a ship out of a fleet of about 150 vessels but had three and four men laid up, dead, or in hospital; all the Government ships that could get away had cleared out. Three of his own men were reported sick and off duty, complaining of lassitude, dull headache, pains in the limbs, loss of appetite, great thirst, hot skin, and high fever. Such are the first symptoms of this fever, and these are quickly followed by nausea, vomiting, and great tenderness in the epigastric region, with complete prostration. Yellowness of the skin and black vomit are the later symptoms.

He at once put his patients under treatment, which consisted of giving to each what he called a double dose of salicylic acid—namely, ten grains mixed in lime juice, and in four hours after, they were quite relieved and fit for duty. The whole ship's company were then put upon it. The usual day's allowance of lime juice was mixed with salicylic acid in the proportion of 3 to 5 grains to each man, and this mixture was served out every morning about six A.M., after they had partaken of their coffee and before commencing work. This was continued for about two weeks with the most satisfactory results; but this daily consumption reducing the stock of acid too rapidly, he determined to stop it and reserve what remained in case of an emergency. In two days thereafter the old symptoms returned, one complaining and then another, and the whole crew came aft and demanded to have their lime juice again. Sailors have no right to lime juice when in port, and are often very indifferent to taking it when at sea, and in this case the salicylic acid improved neither its taste nor appearance, but they had all felt the benefit and were ever ready for their morning's dose.

After being in port for over seven weeks, with yellow fever all around him and the hospital ashore full of it, he had not had one fever patient or lost a day's work of any of his men. Three days before he was ready to sail his stock of acid became exhausted; and so afraid was he to let it be known, that he substituted quinine in its place and had to explain away the difference in the taste by telling them that it was not so strong as usual. He completed loading of the ship with all speed and hastened to depart, for salicylic acid was not known there, and therefore not to be got.

Such a test as this, so satisfactory to those experimented on, and conducted without prejudice and yet with precision, tells its own tale.

If salicylic acid, then, possesses the power (and I feel certain that it does) of destroying the organic germs that generate yellow fever, may it not be equally efficacious in the other malarial fevers wherein quinine has been used with such lavish freedom, and often with but indifferent results; and may it not, if used in time, prove of value as a preventative of cholera that owes its origin to a similar cause, as also in the epidemic fevers that from time to time visit us here.

Salicylic acid is sparingly soluble in lime juice, and it has in itself but feeble acid reactions. In using it, as was done in this case, by mixing with lime juice, the acid of the juice had the effect of heightening its antiseptic properties, by, to a great extent, neutralising the alkalinity that always ensues when germinating organisms are in a state of activity.

In places haunted by yellow fever, from sunset to sunrise a dense misty cloud envelops the lower atmosphere, so that the giving of the salicylic acid in the early morn seemed to destroy the miasmic contagion of the night's surroundings.

With this narration I present the subject to the notice of the profession, as one of national importance and deserving of further investigation.

The same ship is now on her way to Java, with a large stock of salicylic acid in her medicine chest, and how it fares with her there is to me a matter of peculiar interest.

PRACTICAL PAPERS ON THE MATERIALS OF THE ANTISEPTIC METHOD OF TREATMENT.

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IV.—ON THE MACKINTOSH AND PROTECTIVE.

(*With two Woodcuts.*)

IN the number of the *Journal* for March of this year I gave some account of the antiseptic gauze, the chief constituent of the external dressing on which Mr. Lister relies for excluding from wounds the sources of putrefaction which come from without. In the present communication I propose to speak of the other two substances which go to make up this external dressing—viz., the Mackintosh and Protective.

The Mackintosh or Jaconet.—Although I have said nothing, as yet, as to the proper way of using the different antiseptic materials, whose composition and mode of preparation I am engaged in describing in the present series of papers, yet from my account of the antiseptic gauze it will be readily understood that the porousness of that material would allow the discharge to make its way in a very short time through the different layers just opposite the wound, and, as a consequence, it "would probably, in spite of the retentive power of the resin, wash out all the carbolic acid from that part before twenty-four hours had expired." (Lister.) Two disadvantages would result from this: First, the whole of the gauze used would not be utilised, for the discharge would only soak through that part of the dressing immediately opposite the wound; and, secondly, the discharge, as soon as it had removed all the carbolic acid, and had passed through the outermost layer of the gauze and come in contact with the air, would putrefy. There would then be nothing to prevent putrefaction spreading inwards to the wound and defeating the whole object of the treatment. Mr. Lister thus alludes to these two points:—"It is essential, if you expect much discharge, that the dressing should be large—that there should be a considerable space between the wound, or source of the discharge, and the edge of gauze dressing, otherwise you will not have material enough to ensure the absence of putrefaction. If I were to put it on as it is—gauze and nothing more—the discharge would come directly through the porous material, and passing over and over through one limited portion, would probably, in spite of the retentive property of the resin, wash out all the carbolic acid from that part before twenty-four hours had expired; and as soon as the antiseptic had thus been removed from that portion of the gauze, putrefaction would spread in. I therefore interpose under the outermost layer, some impermeable tissue *to prevent the discharge from traversing the gauze directly, and compel it to travel through its entire breadth.*" (*Dublin Journal of Medical Science*, August, 1879.) The italics are mine, as this sentence embodies the two objects aimed at in using the mackintosh. I could give other quotations from Mr. Lister's writings, in which attention is drawn to the same point, but I consider the above extract is sufficiently explicit.

The necessity for some impermeable tissue as a constituent of the external dressing being thus clear, the next thing to decide was, what material would be the most convenient and inexpensive. At first what is termed *gutta percha tissue* was employed. This is made from the produce of a forest tree, *Isonandra gutta*, of the order Sapotaceæ, growing in the forests of the Malayan peninsula, and other parts. It is called *gutta percha*, because that is the Malayan name for the tree from which it is obtained. It is to a Dr. Montgomerie, a resident at Singapore, that we owe its introduction into Europe. In 1842 he noticed a native wood-cutter at work with an axe, the handle of which exhibited a peculiar appearance. On examining the substance he found that it was quite unknown to him; but he learnt that it could be moulded into any form by dipping it into boiling water until it became soft, and that on cooling, after removal from the water, it retained its shape. As a result of his enquiries he saw that it was likely to prove most serviceable in many ways, and he had specimens of it in various stages of preparation sent to the Society of Arts in London. They instituted a series of experiments with it which proved its useful qualities, and that it would be a valuable addition to our materials for manufacture. Experience has fully confirmed this view; and its characters of toughness, combined with elasticity and impermeability to water, have rendered it available for many domestic, surgical, chemical, and manufacturing uses. This is not the place to enter on a description of the mode of obtaining the substance from the trees, or of the lengthy preparation to which the commercial product, as it arrives in lumps in this country, must be subjected before it can be applied to any of the numerous purposes for which it is now known to be valuable. I will content myself with saying that the ordinary *gutta percha tissue* that is used for surgical purposes, is obtained by washing and straining the raw material, and then passing it, while in a hot condition, between steel rollers, which are placed at different distances apart, according to the thickness of the material required; for, as we know, this tissue may be obtained of different thicknesses, and hence the custom of selling it by weight. By the adjustment of a few knife edges, these sheets of tissue may be cut into bands or strips of any width. The reason why *gutta percha tissue* can only be torn in one direction is, that when the substance is placed in its hot condition under the rollers, the fibres of the material are moved into a parallel condition, and consequently there is a difficulty in tearing them across. A great deal of the *gutta percha tissue* at present used is made in France, though there are large makers of it in England, as the Gutta Percha and Telegraph Works Company, Limited, at Silvertown, in Essex. For the last fifteen years *gutta percha tissue* has been in daily use among surgeons, and it has almost entirely superseded the oiled silk that was formerly so much in vogue. This, no doubt, is owing to the fact that it may be obtained at half the price of the latter, while, for most things, it answers quite as well.

While, then, *gutta percha tissue* of good quality would serve very well as an impermeable layer in the external antiseptic dressing, it was found that it was liable to wear into holes and thus become insecure. To meet this drawback, and with the view of providing a substance that could be used over and over again, and thus prove itself less expensive, Mr. Lister introduced a cheap and light form of mackintosh, termed by the India-rubber dealers, "hat lining." It is so called because it is used by hat manufacturers in making hats, a thin slip of it being placed on the interior of the hat, where it is in contact with the head, to prevent the perspiration passing through the felt of the hat, and in time causing a stain. Mr. Lister's reasons for selecting it seem to be that it is "the most durable, and therefore most reliable, material for the purpose, consistent with the requisite lightness." (*Lancet*, 13th March, 1875). It is made by spreading a thin layer of *caoutchouc* on one side of a fine cotton cloth. *Caoutchouc*, known better by the name of India-rubber, is the dried milky sap obtained from several trees of the natural order Moraceæ, but principally from the *ficus elastica*, a species of fig tree, and the *siphonia elastica*, a tropical tree growing in South America. The term *caoutchouc* is its Hindoo name. It is now so familiar and important an article that it is a matter of surprise that so long a period should have elapsed before it was made known to Europe. Its extraordinary property of elasticity, and the grotesque objects made of it by the Indians, caused it to be met with in the cabinets of the curious, while in general the use of it was confined to erasing lead pencil marks, and this valuable power of cleaning paper led to its being called India-rubber. The largest quantity of *caoutchouc* is imported from Pará, in Brazil, and is known by the name Para rubber. I need not describe the manner of "tapping" the trees to obtain the juice, but I may say that commercially, *caoutchouc* appears in two forms, either as large flat pieces, or in the shape of a bottle, from its being moulded on a framework of clay, successive layers of fresh juice being allowed to concrete on a clay mould of that shape. It is either black in colour, due to these successive layers being exposed to smoke to facilitate their drying, or else it is yellowish-white, if not so treated. When first brought over at the commencement of this century, the chief obstacles to its general use were its tendency to soften with heat and to stiffen with cold, together with a peculiar clammy adhesiveness. These natural disadvantages have now been overcome, chiefly by the labours of Mr. Hancock, who took out a patent in 1819 in reference to the substance. The uses of *caoutchouc* for useful purposes are very great, one of the best known being its application to textile fabrics so as to form waterproof garments termed *mackintoshes*, from the name of their inventor, Mr. Charles Mackintosh, of Glasgow, who, in the year 1824, took out his patent for double waterproof cloth, which was made thus:—Three layers of *caoutchouc* solution were laid thickly on the material; two pieces so prepared were then placed face to face, the one forming the outside and the other the lining, and they were pressed together so closely and so evenly as to preclude the passage of air or water. Two improvements were, however, in time effected in this mode of procedure, the first was to render these garments less heavy and incommodious by using cloth of single texture, one side of which only is made waterproof, while the other improvement was the application of the *caoutchouc* to the cloth in a dough-like state and not in solution, a plan which produces results more useful for certain purposes. This is the mode of manufacture adopted in the form of mackintosh used in Mr. Lister's antiseptic system. A fine cotton cloth is taken as the basis of the material, and this is coated on one side, evenly and continuously, with a layer of pure *caoutchouc* or rubber, so as to make it quite impervious. To obtain the material in the thin sheet required, it is heated and kneaded by powerful machinery, driven by steam, until it is thoroughly softened without being liquefied. It is then spread on the cloth by means of a flattening mill. The mackintosh is made of two shades of colour, one white and the other pink. There is no difference between them, except that the cloth of the latter is dyed pink before the *caoutchouc* is spread on it. It is this latter variety that Mr. Lister recommends, and, as he says, "it is made of pink colour, rather than white, to make it conspicuous and show which side of the dressing is to be kept outwards." (*Dublin Journal of Medical Science*, August, 1879). Sometimes this thin mackintosh is termed *jaconet*. I have been unable to ascertain what is the etymology of this word. It seems to be derived from the French "jaconas," the origin of which is unknown, but it is applied to a kind of muslin, made in France, of a thicker, closer texture than book muslin, and much used for collars and children's dresses. It is evident then, that whatever the original derivation of the word jaconet may be, when it is applied to this thin mackintosh it has reference to the cotton material on which the layer of caoutchouc rubber has been spread. The best makers of this material are Messrs. Macintosh & Co., of Manchester, but it can be obtained in Glasgow from Mr. Peter Robertson, India-rubber merchant, 32 Queen Street, Glasgow. The *pink* jaconet, which is 42 inches wide, he sells at 2s. 1d. per yard, while the *white* variety, which is the same width, is 1s. 11d. per yard. When we consider that a piece of it can be used again and again for weeks together, and that the ordinary gutta percha tissue of medium thickness and 36 inches wide costs 1s. 1d. per yard, and is soon liable to wear into holes, it is evident that the mackintosh in the long run is not only trustworthy, but also cheap.

There are several points in connection with the employment of the mackintosh in Lister's antiseptic system which must be borne in mind, and may be as well touched on here. (1.) The layer of *caoutchouc* on the mackintosh should not be of too adhesive a nature. If it is so, it is apt to be torn off when the different folds into which the mackintosh gets are straightened out. Mr. Lister writes as follows upon this point:—"But, unless particular care is taken with its manufacture, the caoutchouc layer tends to adhere in the folds which it acquires from the various altered positions of the dressing, and portions of it may then be torn off when the folds are straightened out, thus destroying the essential property of impermeability; and if the mackintosh be still used in that condition, entire failure of the dressing may result. I have just now under my care a case in which I opened, antiseptically, an abscess connected with disease of the hip joint, where all went on typically for a considerable time, the discharge being merely serous, and so diminished in quantity that the dressing was left unchanged for several days together, when, in consequence of imperfection of the mackintosh, the discharge was observed to have soaked directly through the dressing opposite the wound, and, apparently as a result of this, putrefaction had crept in, which soon led to profuse suppuration and hectic, necessitating excision of the hip joint. It is therefore needful to have this material specially prepared to obviate the tendency to adhesiveness; and, in all cases, a second piece of the mackintosh should be at hand, so that when one piece is observed to become impaired by wearing, the other may be substituted for it." (*Lancet*, 13th March, 1875.) (2.) The impermeability of the mackintosh may be destroyed in another way, and that is, by the presence in the gauze of crude paraffin; for, as Mr. Lister has recently pointed out (*Lancet*, 20th December, 1879), impure paraffin acts on the caoutchouc of the mackintosh, rendering it soft and useless. Under these circumstances it might easily be removed, and the mackintosh would become inefficient. (3.) It must never be forgotten that the mackintosh, of itself, has no antiseptic properties beyond the mechanical one of its own impermeability, and consequently it should always be covered by the gauze. Thus, the piece used in the external dressing should be slightly smaller than the square of the gauze, so that it will not extend beyond it, and perhaps infect the discharge, or screen it from view. So, too, if it should be necessary to employ a double dressing, as in the case of excision of the mamma, "it is necessary that the mackintosh be well covered in at the place of junction of the two pieces, for, if it were allowed to project uncovered in the vicinity of the wound, it might communicate septic mischief." (*Lancet*, 13th March, 1875.) The same warning holds good in cases of amputation of any of the limbs, where the dressing is folded round the part. Great care must be exercised to prevent the mackintosh slipping beyond the edge of the dressing, and thus infecting the discharge from the wound. No doubt there are septic organisms adherent to or lying on the polished surface of the mackintosh when it is placed beneath the outermost layer of the gauze, but the discharge, as it soaks through the gauze, takes up enough carbolic acid in its course to render them inert and destroy them. (4.) The *glazed* surface of the mackintosh is the one that should look inwards towards the wound, and the piece of mackintosh itself should be placed *beneath the outermost layer of the gauze*, "both to prevent it from shifting its place, and for the sake of greater security antiseptically in case of any accidental perforation in the tissue." (*Holme's System of Surgery*, Vol. v, p. 624.) (5.) No pin holes must be made in the centre of the mackintosh near the wound, or, indeed, at any part of it. The reason for this injunction will be best given in Mr. Lister's own words:— "This may seem a small matter, but there is room enough for I do not know how many bacteria to go abreast through a pin hole. The time is coming, or is already come, when a statement of this kind can be made without being received with a smile of incredulity, because it is now established that these bacteria are the cause of the putrefaction; and if so, the laugh must be on the side of those who saw, as distinguished from those who could not see, the truth." (*Dublin Journal of Medical Science*. August, 1879.)

The Protective.—When I spoke of carbolic acid or phenol, I pointed out that one of its chief disadvantages, surgically, was its energetic action on the tissues. As a consequence of this we find that, when applied directly to a granulating wound, it not only causes suppuration by its chemical stimulus (*antiseptic suppuration*), but it even retards cicatrisation, preventing the production of young epithelial cells. It is, therefore, necessary to *protect* the surface of the wound from the action of the acid as much as possible, and this is aimed at by interposing between the sore and the gauze a layer of some material which will keep the acid from passing through it. It is not easy to attain this object, for carbolic acid possesses very penetrating powers, passing through, by a kind of endosmose action, gutta percha and india-rubber with great ease and rapidity. It may be as well to give here an extract from Mr. Lister's address on Surgery, delivered before the British Medical Association at Plymouth, in August, 1871, in which he alludes to this injurious action of carbolic acid, and recounts some of his efforts to overcome the difficulty. He writes as follows:—"There is yet one other point to which I must allude, which is, that carbolic acid interferes with the cicatrisation of a wound, if it acts directly on it. This agent operates with special energy on the epidermis. Sometimes this is a convenience; for example, if we dip the forefinger into a carbolic acid lotion, and hold it there for a second or two, we may be certain that the epidermis is so imbued with the carbolic acid that it is for the time antiseptic, and therefore may be introduced into the cavity of an abscess or any other part which we wish to explore. But this action of the acid on the epidermis makes it interfere with cicatrisation; and even the gauze, though generally free from irritative influence upon the sound skin or an old scar, will frequently, if applied directly to a wound, entirely arrest new epidermic formation and sometimes excoriate a tender young cicatrix. Something, therefore, must be interposed to protect the wound from this effect of the antiseptic. What we have generally used hitherto for this purpose is what we have called the '*oiled silk protective*,' consisting of oiled silk varnished with copal varnish, which makes it much less permeable to the carbolic acid. But, unfortunately, this is not a perfect protective. It acts admirably until it becomes moistened; but afterwards, the water that penetrates the substance conveys the carbolic acid inwards. I have striven in various ways to get something perfect in that way; and I have lately been engaged in a manner which, though not yet completely successful, may be mentioned on account of its interest otherwise. Some time since, I tried the effect of an oil-paint on oiled silk, in the hope that the particles of pigment, closely packed, might serve considerably to intercept the carbolic acid, though the oily material that cements the particles is permeable to it. The result was such as I had hoped, except that the material proved too stiff for convenient use." (*British Medical Journal.* August 26, 1871.) Mr. Lister's next experiments were with caoutchouc, blending it with different pigments and also with magnesia, but none of these attempts was successful, partly because of the irritative nature of some of the ingredients, and because of the presence of the sulphur in the vulcanised rubber used in the investigations. "At length," writes Mr. Lister, "it occurred to me that perhaps shellac, which seems quite unirritating, might be mixed with the caoutchouc; and that this might answer the purpose. For though shellac, when once mixed with carbolic acid, holds it very tenaciously, as is seen in the lac plaster, yet the acid does not readily penetrate into unmixed lac. When I suggested this to the managers of the India Rubber Works, they told me that they had previously ascertained that shellac could be perfectly blended with caoutchouc, the product being the beautiful article you now see, sufficiently tough, yet pliant, transparent, and with no unpleasant odour, and, as I ascertained by experiment, practically impermeable to carbolic acid. Here, then, I thought I had attained the object at which I had been aiming for years; and already we were getting results of a kind we had never got before; we had reached more nearly than ever before the conditions which we know must occur subcutaneously. I had never witnessed the healing of ulcers proceed so rapidly as I have seen it under this protective, covered with overlapping gauze; but, to my extreme chagrin, I have learnt within the last few days that, in two patients with very sensitive skins, even this material produces a trifling irritation. Still, I cannot but believe that we are on the verge of getting what we want in a *protective*—viz., a tissue perfectly bland and unstimulating in its own substance, and also quite impermeable to the antiseptic." (*British Medical Journal*. August 26, 1871.) Several years have elapsed since the above lines were written by Mr. Lister, and, as yet, nothing has been introduced that has been found to answer better than the "*oiled silk protective*," so that I will now say a few words upon its mode of manufacture and the substances which enter into its composition. These are really three in number. (*a*) Ordinary oil silk, (*b*) copal varnish, (*c*) dextrine solution.

(*a*.) *Ordinary Oil Silk.*—This is a very useful waterproof material, made by saturating thin silk so thoroughly in oil that it becomes incorporated with the liquid, and by this means is made impenetrable to moisture. It is quite familiar to all surgeons, and was formerly much used to prevent the escape of moisture from dressings, either by evaporation or by contact with the patient's clothing or bedclothes, but it has of late years been much superseded, on the ground of economy, by the *gutta percha tissue* of which I spoke in the early part of my paper. There are two varieties of oil silk made. One is of French manufacture, and is of a brown colour, either dark or light. In the quality of silk used, and in the mode of manufacture, it is inferior to the other variety, which is greenish in colour, and is made in England, as by Messrs. Rolls & Sons, of London. The greenish colour is imparted to it by the raw silk being dyed first to the colour necessary. It is then afterwards coated with boiled oil prepared expressly for the purpose. Although a not very expensive quality of silk is used it is a somewhat costly article, and it is this that has led to *gutta percha tissue* superseding it. It is also the necessity of using it as a basis for the protective employed in Lister's system, that has made that article so dear.

(*b.*) *Copal Varnish.*—We now come to the most important of the substances of which the protective is composed, for it is the chief agent in keeping out the carbolic acid, or rather preventing it from making its way through the oiled silk. The ordinary oiled silk we use in surgical dressings, if used by itself, would be a very inefficient protective. It is true it would keep out the carbolic acid better than gutta percha or caoutchouc would, and in an emergency, if used in two layers and smeared with an oily carbolic acid solution to render it antiseptic, it might answer the purpose of a *protective* very well, but we want something even less permeable to carbolic acid, and this we have in oiled silk coated on both sides with copal varnish. This varnish is made from a valuable and singular kind of resin that naturally exudes from various trees belonging to the genera *Hymenæa Guibourtia* and *Trachylobium*, and is imported partly from America and partly from the East Indies. The name is derived from *copalli*, which is the Mexican name for the resin. The best copal possesses the following characters. It is hard and brittle, and occurs in round lumps of a moderate size, which are easily reduced to a fine powder. In colour it is light lemon-yellow, and is beautifully transparent; it resembles amber in that it often contains parts of insects and other extraneous substances embedded in it. It is sometimes termed *gum copal*, but that is a mistake. It has not the solubility in water common to gums, nor to any considerable degree the solubility in alcohol which is a character of resins. One way of dissolving it is by digesting it in drying linseed oil and other volatile menstrua, and such a solution forms a beautiful transparent varnish, which, when properly applied and slowly dried, is very hard and durable Copal varnish was first discovered in France, and for a long time it was known by the name of *vernis martin*. It is employed for articles which require durability and transparency. Thus we find that it is applied to the exterior of snuff boxes, tea trays, and other articles, and it is also very serviceable in preserving and giving lustre to paintings. It is made use of to restore the decaying colours of old pictures, and this it does by filling up cracks and rendering the surface capable of reflecting light more uniformly. There is one point in connection with copal varnish which should be borne in mind, and it is this, that copal is apt to be confounded with a substance called *gum animé*, when this latter is clear and good. Now, the importance of distinguishing between them lies in this, that the varnish made from gum animé, though valuable in many respects, is not so hard or durable as that of copal, and consequently is not so efficient. Apart from the fact that the gum animé varnish is darker in colour than that of the copal, the latter substance is brittle between the teeth, and is hardly affected by alcohol, while gum animé is soft between the teeth and easily soluble in alcohol. There are several varieties of copal varnish, each one being suitable for particular objects, but it is unnecessary for me to go into them here. I may content myself with saying that the one used in the manufacture of the *protective* is a fixed oil varnish, being made with linseed oil, which is chiefly remarkable for drying rapidly when laid on any surface which is exposed to the air. It is prepared by mixing the copal, which has been liquefied and finely powdered, with the linseed oil, digesting them at a gentle heat until the whole is dissolved, and then straining the mixture after it has stood for a few days. Such a varnish as this forms a solid and clear glazing which dries easily at ordinary temperatures. Further on I will speak of the method of applying it to the oiled silk.

(*c.*) *Dextrine Solution.*—While, however, oiled silk, coated with copal varnish, would furnish us with a substance that, applied over a wound, would keep away from it the carbolic acid of any dressings applied above it, yet it would be deficient in one or two properties. Thus, if we were to dip it into a watery solution of carbolic acid, it would not take up any of the fluid, and it would be impossible to get it uniformly moistened with an antiseptic lotion, so as to render it free from putrefactive agencies at the time of applying it to the surface of a wound. With the view of overcoming this difficulty, Mr. Lister has advised its being painted over with a solution of *dextrine*. This substance, *dextrine*, known also by the name of British gum, is obtained from starch, by roasting it at a temperature of 284°-320°. "In fact, there is a current anecdote which attributes the discovery of dextrine to a conflagration at a starch factory, where the workpeople, who assisted in quenching the fire, observed that the water which had been thrown on the torrefied starch had a gummy property." (Bloxam.) Be that as it may, in every day life we see instances of its formation by heat. Thus, in baking it is the substance which is produced in the crusts of bread, and which imparts to them their agreeable taste; and again, in toasting bread a portion of the starch on the surface is converted into dextrine, which gives to toast its pleasant flavour, and which we impart to water by dissolving it there in the familiar toast and water drink of the sick room. Dextrine is a white gum-like mass, without any appearance of crystallisation, and soluble in cold water. Its name is derived from its powerful dextro-rotatory action on polarised light. When dextrine is dissolved in water it has all the properties of gum, such as forming an adhesive liquid, which has taken the place of the more expensive gum arabic for many purposes. Thus, it is employed for sizing papers, for stiffening cotton goods, for thickening the colours in calico printing, and for gumming the backs of postage stamps. It has been introduced into the preparation of the protective, with the view of enabling it to be moistened when dipped into a watery solution of carbolic acid, and, by possessing an antiseptic film at the moment of application, prevent the possibility of any active septic particles being put on the wound along with it. But the dextrine is not applied alone. It has combined with it some starch and some cold watery solution of carbolic acid. The proportions in which these are used, and the reasons for their presence, are best given in Mr. Lister's own words:—"In preparing the protective described in the text, when the copal varnish has dried, a mixture of 1 part of dextrine, 2 parts of starch, and 16 parts of cold 1-20 watery solution of carbolic acid is brushed over. The granular starch enables the dextrine solution to apply itself better to the varnished surface, and the solution of carbolic acid is used rather than mere water for the same purpose. The acid soon evaporates, and leaves the protective free from stimulating properties." (*Holme's System of Surgery*, Vol. v, p. 627.)

The above being the substances employed in the preparation of the *protective*, their mode of application is very simple. In establishments where it is made on a large scale, the usual plan is to take the pieces of oiled silk, which run usually about twelve yards in length, and, by means of rollers, pass them through the copal varnish. They are passed over a bar, and are allowed to hang until they are dry, which usually takes forty-eight hours. At the end of that time they are taken down and coated on one side, by means of a brush, with the dextrine and starch solution, which is allowed to dry, and then the other side is treated in the same way. When the whole process is complete, each piece is divided down the centre, and cut into one-yard pieces, which are folded up in tissue paper, and sold in those lengths. The cost of the protective thus prepared is 3s. per yard, at which price it can be obtained by the profession from the Glasgow Apothecaries Company. Ordinary oiled silk costs about 4s. per yard, but it is 45 inches wide, while the protective is only 22. In this way one yard of oiled silk makes two yards of *protective*, and this accounts for the cheaper price of the latter.

In a clinical lecture by Mr. Lister, published in the *Lancet* of 20th December, 1879, will be found some very instructive remarks on the necessity of having an efficient protective, and of exercising care in its manufacture. Space does not allow me to give the quotations I should like, but I may mention generally the points on which he lays stress. These are:—(1.) That the efficiency of the protective depends on its having on each side of it a coat of specially thick copal varnish, and that mere oiled silk, brushed over with dextrine, is comparatively useless. (2.) That it is a mistake to object to the protective so prepared being thick and substantial. "When it comes to be of the temperature of the body, it becomes perfectly soft and pliable; it applies itself beautifully to the part, so that there is no objection to it on that score." (3.) That unless you employ the protective it is impossible to obtain such a process as the organisation of a blood clot in a wound, for the stimulating properties of carbolic acid make themselves so much felt that, instead of organisation and cicatrisation we get granulation and suppuration in the wound. (4.) That some of the materials put forward as substitutes for the oiled silk protective, and announced as prepared with salicylic acid and other antiseptics, are useless and injurious, as they are made up with the very substances that we wish to exclude, thus showing that their authors have no idea whatever of the object for which the protective is used. (5.) That great care should be exercised in the use of the protective, it being borne in mind that, when prepared as above described, it is neither aseptic nor is it antiseptic in any way, for the carbolised dextrine solution does not render it so, the little carbolic acid contained therein soon evaporating. Hence, it must always be overlapped by the antiseptic dressings as freely as if it were a wound, for if it were allowed to project beyond the gauze it would simply serve to conduct putrefaction inwards to the wound.

Lastly, I would add that, while the protective should be only slightly larger than the wound it is to cover, it should not be dipped into the carbolic acid solution until *immediately* before its application, for it is the layer of dextrine on it that enables it to take up enough of the carbolic solution to render it uniformly wet, and so free it from any septic matter that may be on it. Now, if it is allowed to lie soaking in the 1-40 solution, the dextrine layer is washed off; it cannot take up its uniform film of aqueous solution, and its efficiency is consequently impaired, for it is this that renders it antiseptic, prevents it adhering to the margins of the wound, and so allows of it being easily removed when the dressings are changed.

Mode of securing the External Dressing.—Having spoken now of each of the substances which go to make up the external dressing used in Lister's system, I have thought that it would not be out of place to conclude this paper with a few remarks on the best method of securing this antiseptic dressing, whose aim is to keep out all external sources of putrefaction. To effect this object with certainty, it is necessary that the dressing should be so secured that it will not shift its position from the wound over which it is to keep guard. This might be accomplished by means of an ordinary cotton bandage, but experience has shown that bandages made of the antiseptic gauze possess the following points to recommend them. (1.) From their slight adhesiveness they adhere and cling better to the parts beneath. (2.) From their softness and pliability they adapt themselves closely. (3.) They increase the efficiency of the antiseptic dressings. (4.) They are cheaper to use than cotton bandages. On the above grounds Mr. Lister has advocated their use, and they are now very generally employed. They can be purchased ready made, but it is more economical to make them by tearing up one of the six-yard pieces of gauze into the widths required.

Another point to be attended to in securing the antiseptic gauze dressing is, that it cannot be properly fixed by ordinary pins, which shift their positions in it, and may cease to act. When it is remembered, as Mr. Lister says, "that there are cases in which the slipping of a single pin might, by allowing the dressing to shift its place, endanger the life of a patient" (*Lancet*, 13th March, 1875), we see the importance of adopting measures to prevent such a mishap. This is accomplished by using the form of pin which is termed "*safety*," and which is represented in Fig. 1. It acts, as will be seen from the woodcut, by having an extra wire from the head to the point, in which the latter is placed, so that it can neither do any harm, nor can the pin fall out. This *safety pin* was first made about thirty years ago, and was suggested by a man named Easthrupp, whose child had been pricked by one of the ordinary pins, to his employer, Mr. Charles Rowley, who patented the article. The patent expired about eighteen years ago, and since then there have been many other forms brought out, but none have held their ground. There has recently, however, been introduced into England from America, where it was patented, a variety of pin which possesses a distinct sheath or shield, and which is shown in Fig. 2. Such a pin is not quite so pleasing to the eye, and is somewhat more expensive than that shown in Fig. 1, but undoubtedly it is safer. One of the chief reasons for its being more expensive is in the process of manufacture. The pin in Fig. 1 is made by three movements of the machine, one for cutting off the length of wire required, another for giving the twist at the head, and a third one for the twist which conceals the point; whereas, the pin in Fig. 2 requires a separate and special procedure for making the sheath or shield in which the point lies. There are some six sizes of these safety pins, ranging from number 0 to number 6, but numbers 3 or 4 are very suitable sizes for securing antiseptic dressings. They are not expensive, the best quality, number 4 of Fig. 1, costing about 1s. 6d. per gross, while the same pin of Fig. 2 is 2s. 8d. per gross. Messrs. Cooke Brothers, of Birmingham, are large manufacturers of them, their agent in Glasgow being Mr. M'Allister, 114 Bothwell Street. In all cases, then, where we need pins, as, for instance, if we wanted to fasten the bandages to the four corners of the dressing, we should employ these safety pins, but on no account allowing them to perforate the mackintosh of the dressing.

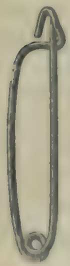
Fig. 1.

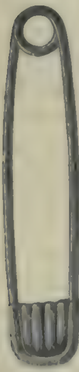
Fig. 2.

There are, however, certain cases where additional security is obtained in the fixing of the antiseptic dressing by applying a few turns of elastic webbing or bandage, either over it or at its edges. There are three classes of cases in which this is useful:—(1) in restless patients; (2) in those which require dressing but once a week; (3) in those where the dressing is liable to disturbance from the movements of the parts beneath, as in cases of empyema, where the respiratory movements come into play, or of psoas abscesses pointing in the groin, and opened there. In all these cases the elastic bandage proves itself advantageous by following the movements of the patient, and insuring the constant application of the dressing to the skin, so that all chance of the dressing slipping, or of air regurgitating in considerable quantities under its edges, is reduced to a minimum. The form of bandage employed is not of very great consequence; but it should possess lightness with elasticity, and, in applying it, that elasticity should only just be brought into play, so that, were it applied round a limb, no œdema or uneasiness would ensue. A very nice bandage, and one quite suitable for this purpose, may be obtained from Mr. Peter Robertson, 32 Queen Street, Glasgow. It is made of pure rubber, is 5 feet long and 3 inches wide, and costs 3s. 6d. It goes under the name of Martin's Bandage, since its introduction by Dr. Martin in the treatment of ulcers of the legs.

To recapitulate, then, in conclusion, I would direct attention to the following points:—

(1.) It is necessary that the external antiseptic dressing used in Lister's system should possess an impermeable layer of tissue in it, not only to prevent the discharge coming directly through, but also to diffuse it over the whole extent of the dressing.

(2.) A thin form of mackintosh, known as *jaconet* or hat lining, is the best material for this purpose.

(3.) This piece of mackintosh should be spread beneath the outermost layer of the gauze dressing, should be somewhat smaller than the dressing, and should be placed with its glazed surface towards the skin.

(4.) Great care should be taken to see that the layer of *caoutchouc* has not become removed in any places, as this would render the material pervious to the discharge, and harm might ensue.

(5.) In securing the dressing, any pins used must on no account perforate the *jaconet.*

(6.) Owing to the irritating effect carbolic acid has upon the tissues, it is necessary to interpose some material between the wound and the gauze, to *protect* it from the acid, and allow of healing going on.

(7.) The most efficient *protective* has been found to be one composed of ordinary oiled silk, coated on each side with a layer of copal varnish, and then brushed over with a solution of dextrine.

(8.) The dextrine is used to enable the protective to take up uniformly an aqueous film of carbolic solution, and thus render it antiseptic at the moment of application.

(9.) The *protective* having no antiseptic properties of its own should be overlapped on all sides by the gauze, and should only be dipped into the carbolic solution immediately before it is applied to the wound.

(10.) The external antiseptic dressing in Lister's system is best secured by gauze bandages, which have several advantages over cotton ones.

(11.) In certain cases additional security is obtained by the use of an elastic bandage above the gauze one.

(12.) If it is necessary to use pins in fixing the gauze dressing, those known as *safety pins* should be employed, as being in every respect better than the ordinary ones.

(*To be Continued.*)

CURRENT TOPICS.

THE LATE DR. MACKENZIE OF KILCREGGAN.—Many of our readers would observe with sincere regret the announcement that Dr. Duncan Mackenzie, of Kilcreggan, died at Dax on the 2nd curt. Dr. Mackenzie was a native of Edinburgh, where he took his diploma at the Royal College of Surgeons in 1856. After assisting his brother, the late Dr. Mackenzie, of Kelso, for two years, he settled at Kilsyth, whence he removed in 1868 to Kilcreggan. He was not originally intended for medicine, but his selection of a profession was abundantly justified. He was a keen observer of disease, and his great natural ability and shrewd judgment of character made him a very trustworthy adviser, well able to turn his experience to practical account. Had he been a little of a business man, his career would have been a more successful one; but while his kindly cheerful manner brought comfort to many a sick bed, and won the confidence of patients and their friends, he was not anxious to make money. His services were equally at the call of rich and poor, and many of the poor will bitterly feel his loss. His unselfishness amounted almost to weakness. The high estimation in which Dr. Mackenzie was held by his professional brethren is evidenced by the fact that he was designated as the next President of the Western Medical Club.

The summer meeting and dinner of the club was to have been held at Kilcreggan under his presidency.

Two years ago he sustained a severe injury of the knee, and from that time dates the failing of his health. About six weeks ago he was evidently seriously ill, and acting under medical advice, he went to the south of France, in the hope that rest and change of air would restore him. From Arcachon he was advised to go to Dax, but went there only to die. The Rev. Dr. Story, of Roseneath, who happened to be in the south of France, accidentally heard of his illness, but when he reached Dax, Dr. Mackenzie was unconscious, and died the following morning, 2nd April. Dr. Mackenzie was buried on the 3rd, at Dax, and it is some consolation to his friends to know that Dr. Story, who remained to the last, writes that his end was painless. Many a professional man and many a visitor to the coast will regret the premature death, at 53, of a practitioner who, with more ambition, might have gained the pre-eminence to which his ability and skill entitled him.

DR. MATTHEW CHARTERIS has been appointed Professor of Materia Medica in Glasgow University, in room of Dr. John B. Cowan, who lately resigned. Dr. Charteris vacates the Chair of Practice of Medicine, for which we already hear of a considerable number of candidates.

PERISCOPE OF DERMATOLOGY.

By A. NAPIER, M.D.

No. I.

(1.) W. A. Jamieson (*Ed. Med. Journal,* April, 1880), General Exfoliative Dermatitis. (2.) M. Aubert (*Lyon Médical*, 28th March, 1880), Diagnosis of Tinea Favosa. (3.) F. Engelmann (*Berl. Klin. Woch.—Gaz. des Hôp.*, 24th February, 1880), General Erythema, from administration of Calomel. (4.) Jarisch and Chiari (*Arch. f. Derm. u. Syph.—Deutsche Méd. Wochenschr.*, 28th Feb., 1880), Tuberculosis of the Skin. (5.) Schwimmer (*Bull. Générale de Thérap.*, 15th Feb., 1880), Treatment of Urticaria by Atropine. (6.) Morrow (*New York Med. Journal*, March, 1880), On Drug Exanthemata. (7.) Claudat (*Thèse de Paris.—Bull. Gén. de Thérap.*, 15th March, 1880), An Epilating Ointment in the

Treatment of Favus. (8.) Kobner (*Berl. Klin. Woch.—Med. Press and Circular*, 17th March, 1880), Quinine Rash. (9.) Colomiatti (*Gaz. delle Cliniche.—Centralblatt f. Chir.*, No. 6, 1880), Changes in the Cutaneous Nerves in Eczema. (10.) Laloir and Chabrier (*Compt. Rend.* 1879.—*Centralblatt f. d. Med. Wissensch.*, No. 14, 1880), Changes in the Cutaneous Nerves in Vitiligo. (11.) Guibout (*Gaz. des Hôp.*, No. 38, 1880), Ichthyosis. (12.) Sangster (*Med. Times and Gazette*, 13th March, 1880), Molluscum Contagiosum. (13.) Startin (*Lancet*, 10th April, 1880), Molluscum Contagiosum. (14.) Morris (*Ibid*), Action of Arsenic. (15.) Vidal (*Gaz. des Hôp.*, No. 29, 1880), Onychomycosis. (16.) Duffey (*Dublin Med. Journal*, April, 1880), Iodic Purpura. (17.) Tichborne (*Ibid*), Decomposition of Alkaline Iodides in the System. (18.) Kidd (*Ibid*), Erythema Uterinum. (19.) Martinet (*Thèse de Paris*, 1879.—*Practitioner*, March, 1880), Chloralic Erythema. (20.) Simon (*Berl. Klin. Woch.—Centralblatt f. d. Med. Wiss.*, No. 10, 1880), Pilocarpine in the Treatment of Prurigo. (21.) Walton (*Med. and Surg. Reporter*, 21st Feb., 1880), Urticaria Treated by Electricity. (22.) Aydelotte (*Med. and Surg. Rep.*, 28th Feb., 1880), Treatment of Obstinate Universal Eczema. (23.) Packard (*Med. and Surg. Rep.*, 6th March, 1880), Treatment of Pruritus Ani. (24.) Sherwell (*Arch. of Dermat.*, October, 1879), Tatooing of Naevi. (25.) Hardaway (*Ibid*), Obliteration of Varicose Vessels in Rosacea by Electrolysis. (26.) Lang (*Vierteljahressch. f. Dermat.—Arch. of Dermat.*, January, 1880), Vegetable Parasite in Psoriasis. (27.) Robinson (*Arch. of Dermat.*, January, 1880), Termination of the Nerve entering into the formation of the "Tactile Corpuscle." (28.) Bulkley (*Reprint from Chicago Med. Journal and Examiner*, January, 1880), Water in the Treatment of Diseases of the Skin. (29.) Bulkley (*The Practitioner*, April, 1880), The Management of Infantile Eczema.

1. *Six Cases of General Exfoliative Dermatitis, or Pityriasis Rubra.*—One of these was characterised by severe spasmodic asthma, albuminuria, and unilateral sweating; another was associated with giant urticaria and lichen pilaris; in another the eruption appeared while the patient was taking chloral for hooping-cough; in another the disease was connected with acute myelitis; one case terminated fatally from broncho-pneumonia. The author thinks that the description given by Hebra of this affection must be relaxed somewhat, and holds that "there are instances of pityriasis rubra which

touch eczema in its more universal forms very closely on the one hand, and pemphigus foleaceus on the other." The prognosis is frequently very grave. The conclusions arrived at are:—

(1.) That there is a peculiar form of superficial inflammation of the skin, having as its most marked features persistent hyperæmia and cuticular exfoliation, not, unless of long duration, much impairing the general health, distinct from eczema, resembling erysipelas migrans in spreading from its margin, apt to continue long, rebellious to treatment, tending to recur and in some instances ending fatally.

(2.) An allied condition in an acute form may be met with, probably related to pemphigus foleaceus.

(3.) The exfoliation is due, as in scarlet fever, erythema, &c., to exudation into the upper layers of the cuticle.

(4.) The main factor in its production is probably some altered condition of the spinal and sympathetic nervous systems.

(5.) It is not favourably influenced by arsenic.

(6.) The best means of controlling it, at least in its chronic forms, are:—

(*a.*) Application externally of the petroleum derivatives, to protect and soothe the skin.

(*b.*) Production of diuresis, by alkalies and digitalis, to unload the congested vessels.

(*c.*) Then the administration of full doses of tinct. fer. perchlor., or small doses of carbolic acid, to diminish cutaneous hyperæmia.

2. *Diagnosis of Favus.*—In certain cases some difficulty is experienced in diagnosing the existence of favus, particularly when the characteristic crusts have been removed or are mingled with epidermic or purulent secretion. In such circumstances, M. Aubert points out that the most certain indication of the nature of the case is found in the breaking up and infiltration of the hair elements by air; this gives to the tufts of affected hair their coarse, dry appearance, and their brittleness. Under the microscope, using a low power, the diseased hair is black and opaque, but becomes brilliant and glittering on turning the mirror so as to withdraw the light; a normal hair, on the contrary, is bright when illuminated, and scarcely visible when the light is cut off. But the medullary canal of a healthy hair, when present, becomes silvery and bright when not illuminated, and that for the same reason that the favus hair becomes brilliant in its whole thickness—because it is filled with air. Other parasitic diseases causing breaking up

of the hairs give the same optical signs; in these, however, the disintegration is not continuous, but occurs in knots more or less widely separate.

3. *General Erythema from Calomel.*—The patient, a healthy man of 42 years of age, suffered from diarrhœa, for which he took three calomel powders, each containing 15 ctgr. Two hours after the last dose the erythema appeared on the face, whence it spread to the whole surface of the body. Next day the case resembled exactly one of very acute erysipelas; face swollen, eyes nearly closed, skin tense and bright red, redness disappearing on pressure, conjunctivæ injected, intense fever. No albuminuria, infiltration confined to the face. Fever and eruption passed off in a few days. Patient had twice previously suffered in the same way; once after having taken some pills containing mercury, and once after having amused himself for some time burning the chemical toys known as "Pharaoh's serpents."

4 *Tuberculosis of the Skin.*—Dr. Jarisch's patient, a previously healthy man, first showed a few crusts on the left ear; these gradually increased in size and eventually became confluent. On removing the crusts, a reddish-yellow granulating, shallow ulcer was exposed, the edges of which were vivid red in colour, slightly infiltrated, movable, and not undermined; cervical glands slightly swollen. In a few weeks superficial ulceration of the mucous lining of the mouth appeared, and soon involved the gums and whole hard and soft palate. The patient further presented the signs of tuberculosis in various organs,—the lungs, peritoneum, bowel, &c. Diagnosis confirmed by *post-mortem* examination. In the marginal part of the ulcer, particularly along the course of the vessel, masses of tubercle were found, and numbers of giant cells.

Chiari records having met with five cases (all males) of this affection, in all of which there was widespread tuberculosis of the other organs. The lips were invariably involved, but here the ulceration was not extensive.

5. *Treatment of Urticaria by Atropine.*—A report of three cases of obstinate chronic urticaria, successfully treated by atropine internally. The first patient, who had suffered from the disease a whole year, was directed to take two of the following pills per day.

℞. Atrop. Sulph., 1 centigr.
Aq. Destill.
Glycerini, āā 2 grammes.
Pulv. Gum. Trag. q.s.
m. et. ft. pil. x.

In all the cases improvement was noticeable in a few days. The only drawback to this method of treatment is, that the unpleasant physiological effects of the drug are apt to show themselves; Dr. Schwimmer, indeed, thinks that a cure may be effected, and dangerous symptoms avoided, by giving half the dose indicated above. He believes, also, that the remedy acts through the ganglionic system of nerves.

6. *Drug Exanthemata.*—The distinctive features of drug exanthemata are thus stated by Dr. Morrow: In general the eruption comes out rapidly, in a few minutes or hours, while it often vanishes with the same celerity; it varies in severity from simple erythema to the most violent inflammation, is attended by the ordinary physiological effects of the drug, is usually marked by absence of fever and high temperature, but is accompanied by burning and tingling of the part; in extent and severity it bears no relation to the quantity of the medicine taken; the occurrence of one attack appears to intensify the morbid susceptibility.

7. *Treatment of Favus.*—M. Claudat begins the treatment of favus by applying the following epilating ointment:—

Simple ointment, 25 grammes.
Glycerine, 5 grammes.
Carbonate of soda, 4 grammes.
Powdered quick lime, 2 grammes.
Powdered charcoal, 50 centigr.

In about ten days the scalp becomes red, when epilation may be begun. The hairs may now be seized with the fingers and extracted without the least pain. This should be followed by a five per cent lotion of corrosive sublimate, or chrysophanic acid ointment.

8. *Quinine Rash.*—The patient whose case is here reported, took an ordinary dose of quinine for bronchitis; two hours afterwards he had a violent rigor, a feeling of suffocation, headache, nausea, vomiting; two hours later another short rigor, followed by a general sensation of heat. Next morning there was fever, and an itchy eruption, of a deep red tint, over the whole body. Face swollen, conjunctivæ injected, throat sore. On the thighs the eruption was papular. It resembled first a migratory erysipelas, then scarlatina. In a few days the rash faded, and was followed by desquamation; patient had had two similar attacks. The author, in studying the differential diagnosis between scarlet fever and quinine rash, draws particular attention to the use of the thermometer and the analysis of the urine,—the latter with the view of determining

the presence of quinine. He believes that the rash results from the irritant action of the quinine, exercised through the medium of the blood, and not from nervous influence.

9. *The Cutaneous Nerves in Eczema.*—In cases of eczema, particularly of the papular and papulo-squamous forms, various changes were found in the cutaneous nerves. The nerves were always surrounded by groups of connective tissue cells, the endothelium of the lymph spaces was swollen and sometimes divided, and migratory cells were seen in the primitive sheath. The nerve fibres themselves were in an embryonal condition: the white substance and axis cylinder were wanting, the primitive sheath being filled with small rod-shaped granules; in the same nerve bundles, however, normal fibres were found alongside those described. In and round these bundles were drops of free myelin, and migratory cells with globules of myelin in their protoplasm. The majority of the nerve fibres of the affected portion of skin were, thus, far advanced in that form of degeneration observed after division of a nerve. These changes must obviously begin at an early stage of the disease, as they were noticed both in acute and chronic eczema. It was found impossible to follow out the stages by which the nerve bundles regained their normal structure as the eczema got better. The author concludes that eczema is really cured only when the cutaneous nerves have returned to their normal condition; this occurs spontaneously in slight cases, but it should always be kept in view in treatment.

10. *The Cutaneous Nerves in Vitiligo.*—A portion of skin affected with vitiligo was removed from the abdomen and examined microscopically, when the following appearances were noted:—atrophic degeneration of the nerve fibres, with disappearance of the axis cylinder; disintegration, and at places complete disappearance, of the gray matter; great increase in the number of the nuclei; the epidermis was extremely thin, and no trace of the papillæ was observable. The vitiligo had lasted three years, and had been preceded by syphilitic ulceration. Patient had suffered from childhood from various skin diseases—impetigo, pemphigus, psoriasis, syphilis. The patches were surrounded by well marked pigmentary circles.

11. *Ichthyosis.*—M. Guibout treats ichthyosis chiefly by external applications; he directs that an ointment consisting of 100 parts of glycerole of starch to 10 of cherry-laurel water, be rubbed firmly into the skin of the entire body twice a day. The skin will thus, in many cases, resume nearly its

natural appearance in ten to fifteen days. The action of this application is assisted by two hot baths per week. Internally, —tonics, arsenic, iron, &c. This treatment is simply palliative. Tar has been strongly recommended in England (Sir. W. Scott is said to have been cured of ichthyosis by this means), but it has failed in the hands of Continental physicians.

12. *Molluscum Contagiosum.*—Mr. Sangster advocates strongly the view that molluscum contagiosum is not a disease of the sebaceous glands. His investigations tend to show rather that it is a disease of the epidermis in which three layers take part. The cells of the rete go to form the peripheral portions of a molluscum growth; the changes affecting them are probably simply hyperplasic, and consequent upon the peculiar molluscous change (molluscum bodies). The cells of the granular layer degenerate and form the deep molluscum bodies; those more superficially placed being associated with the corneous layer. It is argued, therefore, that as the peculiar degenerative change has to do with the superficial layers of the epidermis, the disease can have nothing to do with the sebaceous glands, in which structures these layers are not represented. Molluscum bodies are also found lying amongst the prickle cells—another proof of their epidermal origin.

13. *Molluscum Contagiosum.*—Mr. Startin considers molluscum tumours as glandular in origin, but developed from abortive rather than normal glands. They are always found where sebaceous glands abound; the molluscous bodies are not seen outside the tumour; in structure they are just like glands, with the exception of the presence of the molluscous bodies, and all three layers of the epidermis can be seen in them. They are most often met with in patients showing other signs of perverted nutrition. An examination of the contents of the tumours showed them to consist of molluscum bodies, and clear highly refractile epidermic cells. A vertical section through one of the growths showed the same molluscous bodies in the centre, with vacuolation in some of the cells, hyperactivity of the gland tissue, and abortive attempts at hypertrophy of the gland elements.

14. *Action of Arsenic.*—Arsenic influences the nutrition, respiration, circulation, and nervous system; it is eliminated by the skin, mucous membranes, liver, and kidneys. The increase of appetite which it causes is due rather to diminished oxidation than to any direct action on the intestinal mucous membrane. This diminished oxidation is caused by the fact that arsenic has the power, to a great extent, of taking the

place of oxygen in the coloured blood corpuscles, and so prevents the blood from receiving its usual amount of oxygen from the lungs. Its action on the respiration is also due to its action on the blood, for diminished oxidation means greater freedom of the respiratory movements, and decrease of oxygen in the blood means a greater stimulation of the respiratory centre. Its action on the circulation and the nervous system is more obscure, but in the former there is a marked fall in the blood pressure. That arsenic is eliminated by the liver, kidneys, and mucous membranes, is proved by its having been discovered in the bile and urine, and by its causing bronchitis, conjunctivitis, and diarrhœa. That it is eliminated by the skin has also been proved by its having been detected in the serum of a blister and in the sweat; its special action, in large doses, on the epidermic cells, has been investigated by Miss Nunn and Dr. Ringer. Its efficacy in many cases of psoriasis is undoubted; here it seems to the author to act on the blood by diminishing not only the oxidation in the tissues, but by absolutely diminishing the number of the red blood corpuscles.

15. *Onychomycosis.*—M. Vidal here considers specially the diagnosis of parasitic diseases of the nail, due to the achorion Schönleinii, from that caused by the trichophyton. In the former (favus) the nail itself is not altered, but is loosened and raised at the edges; the parasite is found under the corneous layer, in spots of a yellowish-brown colour, and produces longitudinal striation; it is developed principally under the nail, between the derma and the corneous layer. In trichophytosis the nail itself suffers, the parasite invades the superficial corneous layers, begins usually at the point of the nail, and proceeds in lines, or may be found grouped in masses of various forms; it is always more widely diffused than favus. The spores of the trichophyton are small (measuring 2-4 micro-millimetres), rounded, brilliant, and articulate, and are not so abundant as those of favus; the spores of the latter are larger (4-5 micro-millimetres), more irregular in form, and are more plentiful. Trichophyton breaks up the nail, causing it to scale off in layers. Diagnosis is easy if the patient suffer from either affection in other parts—in the hair or on the skin. Trichophyton is more apt to destroy the nail than the other parasitic diseases. These affections are to be distinguished from psoriasis of the nails by the typical *transverse* striation caused by the latter disease. In eczema striation is longitudinal, but the nail is not broken up into bristle-like threads.

16. *Iodic Purpura.*—The patient in this case, a man aged 25, suffering from rheumatism and mitral disease, had been taking iodide of potassium for at least a month, at first in doses of 10 grains, and subsequently 15 grains, three times daily, when a copious eruption of small purpuric spots appeared on the front and sides of both legs. Gums were not spongy; no hæmorrhagic tendency; no albumen in the urine. In about eleven days after discontinuing the iodide the rash faded. Shortly afterwards three doses, each 15 grains, were given, and next day the rash had reappeared. Iodide of ammonium also promptly produced the spots. Iodide of sodium was then ordered, when it was found that this salt was borne without the least discomfort and without the appearance of any eruption. The author ascribes this effect of the iodides to the action of free iodine liberated from them. He suggests also, that the harmlessness of the iodide of sodium, and the markedly greater tendency of the iodide of potassium to produce eruptions, are in some way connected with the relatively large proportion of potassium salts in the red blood corpuscles, and of sodium salts in the plasma. The activity of the ammonium salt may also be due to the large percentage (87%) of iodine it contains.

17. *Decomposition of Iodides in the System.*—In connection with the discussion which took place on the foregoing paper, in the Medical Society of the College of Physicians, Dublin, Professor Tichborne made some interesting remarks on the decomposibility of iodides within the system. The first step appears to be the dissociation of hydriodic acid from the iodide; the former is then partially oxidised into iodic acid, when the following well known reaction would take place:

$$HIO_3 + 5\,HI = 6\,I + 3\,H_2O$$

With regard to the relative decomposition of the alkaline iodides, the results of his experiments coincided, in a remarkable manner, with the therapeutical action of those drugs. The power of the salt to produce iodic rash was in direct ratio to its decomposibility. In one of the experiments described, a solution of sodium iodide gave off 0·37 per cent of HI, potassium iodide 0·6 per cent, ammonium iodide 15·74 per cent. Thus, sodium iodide, though containing much more iodine than potassium iodide, is a safer remedy, being twice as stable. It is also pointed out that the marked chemical analogy of the potassium and ammonium salts, which analogy is not shared by the sodium salts, is borne out by the striking similarity observed in their therapeutical action.

18. *Erythema Uterinum.*—Dr. G. H. Kidd describes, under

the name *erythema uterinum*, an eruption which he has met with in about 3 per cent of the midwifery cases he has attended, and which he has also seen after trivial operations on the uterus in women who had never been pregnant. It is interesting chiefly because it very closely resembles commencing scarlatina. It appears on third, fourth, or fifth day after confinement, as broad erythematous patches on the abdomen; next day it appears in the axillæ, and spreads over the chest and downwards to the abdominal portion of the eruption; it does not affect the face beyond deepening its natural colour, but spreads down the arms to the hands, and down the thighs and legs. There is no fever, pulse and temperature are normal, lochia and milk are unaffected, appetite undiminished; no headache or inflammation of the tonsils. The rash begins to fade at the end of the second day after its first appearance, but may linger on the abdomen till about the fifth day. There is no desquamation of the cuticle, kidney complication, or œdema. In small-pox epidemics it must be distinguished from the preliminary erythema occasionally observed in that disease. Dr. Kidd also relates several cases in which painful or suppressed menstruation was regularly accompanied by herpetic or bullous eruptions. He explains the occurrence of these eruptions in this way:—After delivery the internal surface of the womb is practically a large open wound; its nerves are enlarged, exposed, and irritated, and the nerve centres with which they are connected are exhausted; the vasomotor nerves proceeding from these centres are temporarily paralysed and dilated, hence the erythema; if the capillaries be so full that they cannot accommodate themselves to the pressure, they pour out serum, hence the vesicles, &c., which are sometimes observed.

19. *Erythema from Chloral.*—Dr. Martinet arrives at these conclusions regarding hydrate of chloral eruptions:—(1.) The ingestion of chloral produces, in a certain number of individuals, an exanthematous eruption which may be called chloralic erythema; in some cases urticaria and purpura have been observed after its administration. (2.) The erythema appears on the face, neck, abdomen, over the large joints, and upon the back of the hands and feet. It occurs after eating, and after drinking alcoholic beverages. There is frequently no fever, and the duration of the eruption is very short. (3.) The eruption is often accompanied by dyspnœa and intense palpitation. (4.) It is observed only in persons who are predisposed to it. (5.) It appears to be due to a paralysis of the vasomotor centres in the same way as in the accompanying

dyspnœa and palpitation. (6.) The eruption reappears on renewing the dose of chloral. (7.) The amount of chloral required to produce the eruption seems to be of little importance from the point of view here adopted.

20. *Pilocarpine in Prurigo.*—Dr. O. Simon finds that pilocarpine, injected subcutaneously, together with the administration of a syrup of jaborandi, exercise a very favourable influence on cases of prurigo (Hebra). One gramme of a 2 per cent solution was injected daily; the patients were then wrapped for some hours in thick woollen blankets. The profuse sweating at once relieved the feeling of itching, and sometimes abolished it entirely. The eruption also soon begins to yield, the swelling of the inguinal glands subsides, and the cure is usually complete in 2-4 weeks. The treatment with pilocarpine should be alternated with tarry applications and baths. This effect of the pilocarpine does not seem to be permanent, however, but the relapses were considerably postponed and mitigated in severity. No benefit was obtained from the use of pilocarpine in other skin diseases. Neither did it promote the growth of the hair in alopecia, as the cases recorded by Schmitz and Schüller might have led us to expect; in only one case of universal alopecia did it seem to have any such effect, and in it only the fine downy hair which grows on the body was reproduced.

21. *Electricity in Urticaria.*—In the case here recorded, the wheals extended over the entire surface of the body, even to the palms and soles. While the patient was in the recumbent position the eruption *disappeared,* to manifest itself again when she arose; thus, shortly after retiring at night the itching ceased, but returned a few minutes after rising in the morning. The only cause to which the affection could be ascribed was the patient's period of life. She was just approaching the climacteric, and the menses were irregular. On the presumption that the disease was due to disorder of the circulation in the spinal cord, dependent on nervous influence, and all other means of treatment having failed, the constant electric current was resorted to, the positive pole being applied to the nape of the neck, and the negative pole over the sacrum; these applications were made twice a day. At the end of four days the disease had disappeared.

22. *Treatment of Obstinate Universal Eczema.*—The use of antacids in sufficient doses to establish and maintain a neutral or alkaline condition of the secretions is the first step in the treatment of obstinate universal eczema. The following is of service in adults.

℞. Sod. Bromidi, ℥i.
Sod. Bicarb., ʒiiss. ♏.
Sig. One powder in water a short time before each meal.

℞. Acidi Arseniosi, gr. i.
Quin. Sulph.
Fer. Redact. āā ʒss. ♏.
Ft. pil. xxx.
Sig. One pill half-an-hour after each meal.

To relieve itching, the best application is a lotion of cyanide of potassium, five grains to the ounce. Bandaging and rough handling to be avoided; glycerine or some such preparation to the surface, to exclude air; greasy substances not to be applied during stage of exudation; astringents when redness is disappearing.

23. *Treatment of Pruritus Ani.*—One form of pruritus ani is caused by the pressure of a small fæcal mass against the internal sphincter. Whether from want of tone in the upper bowel, or from carelessness on the part of the patient, a full evacuation is not obtained, and a sort of supplementary stool comes down and rests on the sphincter muscle. This variety of the affection is promptly relieved by a small injection of *cool* water, which brings away a few small lumps of fæces.

In the other and more common form of pruritus ani, which seems to be analogous to the seemingly causeless itching of the vulva in women, or of the skin generally in old people, the following ointment has often succeeded in Dr. Packard's hands where the whole array of the ordinary remedies had failed.

℞. Camphoræ.
Chloral. Hydrat. āā ʒss.
Ungt. Petrolei ʒvii. ♏.
Sig. The ointment: apply frequently.

24. *Tatooing of Nævi.*—Dr. S. Sherwell treats nævi by tatooing them with a number of fine needles set closely together and dipped in a dilute solution of carbolic or chromic acid. When the operation is completed, a coating of collodion is applied to the surface. The proceeding may be repeated as often as necessary. It is not claimed for this mode of treatment that it is either painless, instantaneous in results, or that it leaves no scar, but it possesses many advantages. Small nævi often disappear after one operation; larger marks take longer. The strength of the styptic solution must vary with the idiosyncrasy of the patient; it is recommended that a tentative or exploratory operation should always be performed. Parts that are pendulous or soft are most difficult to operate

upon; all other things being equal, the brow is the most favourable site for this method of treatment.

25. *Treatment of Rosacea.*—An essential part of the treatment of rosacea is the obliteration of the enlarged and tortuous blood-vessels seen in the later stages of the disease. This may be accomplished by dividing the vessels longitudinally with a sharp knife, or by puncturing them with a needle coated with some caustic. But a better plan is the following, as it needs but one sitting, when properly done leaves no scar, and causes no local reaction:—A very fine cambric needle, fixed in a convenient electrode handle, is attached to the negative pole of a galvanic battery; a sponge electrode is connected with the positive pole. The needle is then inserted sufficiently deep to enter the dilated vessel; when this has been accomplished the patient approaches the sponge electrode to the palm of his hand; after the electrolytic action has been properly developed, the patient releases the sponge electrode, and the operator withdraws the needle. Six to eight battery elements usually suffice. A few seconds after introducing the needle, the point of puncture and a small surrounding area become quite blanched, and the column of blood is seen, mercury-like, to run up the vessel and into the collateral branches, apparently forced up by the gas evolved. In a long vessel several punctures must be made. The needle may be inserted perpendicularly or parallel to the vessel; the latter procedure is best if the vessel be short. With a sufficiently fine needle (No. 13, cambric) and a two-inch lens, one may always hit the vessel.

26. *Parasite in Psoriasis.*—Professor E. Lang finds that the fine membrane underlying the scales on a patch of psoriasis, first described by Dr. L. D. Bulkley, of New York, is composed of changed epithelium, degenerated masses, and fungi, the latter in the form of spores and threads. The spores were round or oval in shape, 0·006 to 0·008 mm. in diameter, with pale, finely granular protoplasm, and sometimes, though rarely, nucleated. Evidences of germination were often noticed. The threads were 0·002 to 0·004 mm. wide, with frequent transverse septa and bulbous ends. For this fungus, which differs in many respects from any hitherto described, and which the author believes to occur in psoriasis certainly not more rarely than does tricophyton in tinea tonsurans, the name "epidermophyton" is proposed.

27. *Nerve-ending in Tactile Corpuscles.*—The author has become convinced that the medullated nerve fibres, entering into the formation of the tactile corpuscles, do not terminate

in the corpuscle, as is generally believed, but pass on without their sheath into the rete Malpighii, where they divide, and probably end in the same manner as the other nerves. The nerve seems generally to change its direction after emerging from the corpuscle, and is thus seen in transverse section at the upper part of the corpuscle. In a figure here given of one of Dr. Robinson's preparations, the nerve is seen passing obliquely upwards between the cells of the rete to the space between the second and third rows of cells, when it assumes a longitudinal direction; after passing a short distance horizontally, it turns perpendicularly downwards, and is lost to view. At several points the appearance of the nerve having divided was noticed.

28. *Water in Treatment of Skin Diseases.*—Water is by no means an indifferent agent as regards its influence upon the skin, either in health or disease.

(1.) The warm bath is useful as a means of removing effete matter, and equalising the circulation in scaly eczema, psoriasis, ichthyosis, lupus, and obstinate ulcerative syphilis; it is sometimes used continuously, for weeks or months, in burns, pemphigus foleaceus, phagedæna, &c. But acute eczema, and the sub-acute exuding forms of the disease, are aggravated by the contact of simple water; so is urticaria, as well as most of the inflammatory skin affections. Baths of warm sea water are of service in psoriasis, and sometimes in chronic urticaria; eczema and acne, on the other hand, are usually made worse by sea bathing and the seaside atmosphere.

(2.) Washings with hot or cold water have a bad effect, as a rule, on eczema, particularly in children. An eczematous surface should be washed very seldom. The scalp, however, when eczematous, should be cleansed at least once or twice a week, and an ointment applied *immediately*. Certain patches of very chronic eczema, as on the hands, will bear frequent washing with very sharp friction—as with sapo viridis and a piece of flannel. In eczema of the anus, or of the scrotum, very hot moist applications are of great value. The palms of the hands, when the seat of chronic eczema, should be soaked daily in very hot water, and at once covered with diachylon or other ointment. The beneficial effect of steaming the face in acne is well known.

(3.) Wet sheet packing does good service in the treatment of acute psoriasis and acute general eczema.

(4.) The Turkish bath is useful, though not to a very marked degree, in psoriasis, chronic eczema, chronic urticaria, lichen, and ichthyosis. Steam or vapour baths, modified by the addition of sulphur or mercurial vapour, are in great repute in the treatment of skin diseases. The value of the mercurial bath in syphilitic eruptions is generally acknowledged. The sulphur vapour bath will cure parasitic diseases, but the artificial eruption produced, somewhat neutralises the benefit received. It is of some service also in psoriasis and chronic papular eczema, but here it must be used with caution.

(5.) Medicated water baths. The warm alkaline bath does much to remove skin disease, even from parts not submitted to the bath. One ounce of powdered borax, two of carbonate of soda, and four of carbonate of potash, with half a pound of starch, to thirty gallons of warm water, will make a mild alkaline bath, which acts very favourably in sub-acute eczema and urticaria; it may be made even stronger for psoriasis, ichthyosis, prurigo, &c. On leaving the bath, the skin is not to be rubbed, but gently dried and at once covered with a suitable ointment. Glycerine or gelatine may be used instead of the starch. A favourite method of treatment with Hebra, for chronic and much thickened eczema, is to tar the part over and then cause the patient to remain fifteen or twenty minutes in a common warm or alkaline bath. Sulphuret of potassium in baths, though often recommended, very frequently aggravates cutaneous eruptions.

(6.) The natural mineral springs are often efficacious in the treatment of obstinate cutaneous affections, but their value is much overrated.

29. *Management of Infantile Eczema.*—The physician's attention should always be directed first to the mother, to correct errors in diet, general health, &c. In this connection oxaluria must be specially kept in mind; fermented liquors should be cut off, and the allowance of tea diminished; milk is the best food she can have, perhaps with a little alkali added. If the mother's milk be poor, the child may get a little cod liver oil or cream; or oil may be administered by inunction. But milk is the proper food for children under one year. Constipation, from which the child very frequently suffers, is best treated with lactopeptine in sufficient doses; it may be simply placed on the tongue, or given suspended in orange-flower water. Constipation may also be treated with calomel, according to Wilson's method. A little oatmeal added to the food assists in this respect. As regards internal remedies, alkalies often do much good. They may be given to the mother with the view of influencing the child; acetate of potash, and nux vomica, in a bitter infusion, make a good com-

bination for use in this way. Vichy water or liq. potassæ may be added to the child's milk. If there be much restlessness at night, and when the skin is dry and harsh, the acetate of potash (1-5 grains) should be given three or four times daily, in a teaspoonful of liq. ammon. acetat., with, if there be much arterial excitement, a little tincture of aconite. Children bear arsenic well; but though extremely useful in some cases, it cannot be relied on to produce any uniform effect. Iron should never be forgotten; the wine, ammonio-citrate, tartrate, and the syrup of the hypophosphites of soda, lime, and iron, are very valuable—more so than the syrup of the iodide of iron. The standard rhubarb and soda mixture of the dispensaries is very commonly beneficial. The treatment must be adapted to the patient; to the full, ruddy-faced child tonics would be hurtful, but light purgatives and alkalies probably of great value; the pale, strumous-looking child, on the other hand, requires arsenic, iron, cod liver oil, &c. For the first class of cases calomel is the best purgative; rhubarb or castor oil for the second. Locally, perhaps oxide of zinc is the best remedy in the strength of 60, but more often 30 grains to the ounce of "cold cream," which is a much better excipient than lard; cosmoline, or the glycerite of starch may also be used. In some cases good results are got from an ointment of the following composition:—One part of common tar ointment to three parts of cold cream, to which is added a half to one drachm of oxide of zinc to the ounce. Bismuth, tannin, or weak white precipitate ointment are all valuable at times; tannin acts best on a dry, red, somewhat scaly surface. Ointment should, as a rule, not be rubbed in, but spread on a cloth and laid on the parts, particularly if there be much tendency to exudation. Washing once or twice a week is enough in acute cases. An occasional alkaline bath (see preceding paper) will give much relief. Poultices should never be used, except to remove thick crusts. When the affection becomes chronic, Hebra's compound tincture of green soap, either in full strength or diluted with water, is of great value. Zinc ointment, with a drachm of the oil of cade to the ounce rubbed into it, is often used for the same purpose. Localised thickening may be got rid of by the use of the dilute citrine ointment, or ungt. hydrarg. rubr. diluted with three times its weight of cold cream.

REPORTS OF HOSPITAL AND PRIVATE PRACTICE.

GLASGOW ROYAL INFIRMARY.

REPORTS UNDER THE SUPERVISION OF DR. J. WALLACE ANDERSON.

FROM DR. MACEWEN'S WARDS.

THE following five cases of excision of different joints may be conveniently reported together. They have all been admitted since the beginning of the year, and are taken in the order of their admission:—

I. ABSCESS IN THIGH—DISEASE OF HEAD OF FEMUR—EXCISION. —C. R., æt. 4, admitted 6th January to Ward XXII. The whole of right thigh in front and on its outer aspect was red, much swollen, and very tense, and there was evidently a collection of pus. On 10th January the abscess was evacuated, and the pyogenic membrane scooped out by means of Volkmann's spoons. Decalcified drainage tubes were inserted, and an antiseptic dressing applied. On 15th January an organised blood clot filled the orifice of the wound, and there was not a drop of pus. Very soon the parts healed completely, and patient was taken home.

13th February.—Patient readmitted with a swelling over the head of the femur; an exploratory incision was made into this, and the probe passed down to bare bone. A decalcified drainage tube was introduced into the incision, and the wound again dressed antiseptically. On the 9th March, Dr. Macewen performed excision of the head of the femur. It was very much diseased, there being several distinct necrosed portions of bone. The cavity was scraped with Volkmann's spoons, the granulations removed, and the interior washed out with chloride of zinc solution (40 grs.—1 oz.) Decalcified drainage tubes were introduced into each sinus, the remains of the first abscess, and one long tube inserted by the excision wound into acetabulum. *18th March.*—The two lower drainage tubes are partially absorbed, and the one which had been inserted into excision wound has entirely disappeared. On the 22nd March the excision wound was healed, and all the drainage tubes were absorbed. There has been no constitutional disturbance, and we have always found the child remarkably contented and happy.

II. DISEASE OF WRIST JOINT—EXCISION.—Annie W., æt. 12, admitted to Ward XXII on 26th February. In this case, the disease had existed for a year or two, and, on admission, was very extensive. The joint was anchylosed, and the tendons were adherent, causing almost complete immobility of the fingers. On the 20th March, excision of the wrist was performed according to Lister's method. Decalcified drainage tubes, threaded with hair, were inserted on ulnar border of wrist. In addition to the usual aftertreatment, Dr. Macewen kept up constant extension by the improvised use of what are known as "Chinese puzzles." These are tubes of plaited straw, into one of which a finger can be inserted, and, on extension, the latter is firmly grasped. By means of one or two of these extension was made, which was applied in such a way as that at any time they could be slipped off the finger for the purpose of making passive movement, or, at least, as in the earlier stages, relieving the strain. *5th April.*—The wounds are now practically healed. Patient can move each finger independently, and with a considerable amount of freedom.

III. DISEASE OF ELBOW JOINT—EXCISION.—Robert M., æt. 10, admitted to Ward XXI on 2nd March, suffering from pulpy degeneration and erosion of the cartilages of the elbow joint. The joint itself was full of pus, and the abscess was beginning to point. *28th March.*—Dr. Macewen opened the abscess, and proceeded at once with the operation. Ollier's method was followed. Resorbent drainage tubes were inserted into the cavity of the excision through the lower border or floor of the wound. The case was dressed every third or fourth day, and after the second dressing there was no pus, but simply a serous discharge. *5th April.*—Wound is completely healed, leaving a linear scar. The apertures for the drainage tubes have cicatrised, and the tubes themselves have disappeared.

IV. COMPOUND DISLOCATION AND FRACTURE OF ANKLE JOINT.—Peter K., æt. 28, admitted 12th March to Ward XXIX, with a compound dislocation and compound comminuted fracture of left ankle joint. He had received, while at work in a coalpit, a severe blow on the ankle by which the foot was forcibly everted. There was a wound four inches by three, extending from the middle of the foot in front along the inner side to the back of heel. Through this wound the tibia and astragalus protruded, the latter being almost completely separated from its attachment. The internal malleolus was fractured, and several other fragments of bone, along with a portion of the distal extremity of the fibula, were found in the ankle joint. On the outside of the limb, over the external malleolus, the surface was much bruised, and ultimately a slough formed and separated, leaving a sore four inches by three, meeting the former wound in front and leaving only about an inch of tissue at the heel. The astragalus and all the fragments were removed, and the wound washed out with an aqueous solution of carbolic acid (1-20). A couple of decalcified drainage-tubes, threaded with hair, were introduced, and the limb put up in a paraffin splint. During the first week the temperature ranged from 100° to 103°, in the second from 100° to 102°, and afterwards it varied between 98° and 100.° *7th April.*—The wounds are now cicatrising, and the case is doing well.

V. ANCHYLOSIS OF ELBOW JOINT—PARTIAL PARALYSIS OF FOREARM AND RIGIDITY OF FINGERS—EXCISION.—Janet F., æt. 22, admitted 22nd March to Ward XXII, suffering from anchylosis of the elbow. The disease was of long duration, had led to partial paralysis of the forearm with considerable rigidity of the fingers. So pronounced have these complications latterly become, that she has been compelled to give up her employment as a weaver. Of late she has also felt a very distinct "numbness" in the hand, particularly in the fingers. Under the belief that the chronic inflammation of the elbow had set up adhesions involving the nerves, especially the ulnar, Dr. Macewen resolved to excise. *27th March.*—Operation performed to-day by Ollier's method. The bones of the joint were firmly adherent by osseous union, and the ulnar nerve was also adherent to the periosteum. *16th April.*—The case has progressed most favourably. The numbness complained of is quite gone, and the fingers can already be moved with much more freedom than before the operation. The excision wound is healed except at two points where the drainage-tubes were inserted. These latter have been absorbed.

FROM DR. DUNLOP'S WARDS.

TWO CASES OF STRUMOUS ABSCESS. [Reported by Mr. M'Ilwraith.]—I. William M., æt. 17, painter, was admitted to Ward XV, on 7th February, 1880, complaining of a swelling in his right groin. Patient states that about fourteen months prior to his admission, his general health began to fail, he felt much weaker than formerly, and lost considerable weight. These symptoms became progressively worse, and were followed by a swelling of his scrotum, which he found to be connected with his testicle; he was also unable to retain his urine. He then sought medical advice, and was treated for "inflammation of the bladder and kidneys." About four months ago the swelling in his scrotum broke, and after discharging for three or four days healed up, leaving a cicatrix. The swelling in his groin only attracted his attention five weeks ago.

On examination, the patient has the appearance characteristic of the strumous diathesis. There is a relaxed condition of the whole muscular system, accompanied by a feeble circulation and a weak and irritable state of the digestive organs. In the right inguinal region a fluctuating tumour of considerable size was detected, somewhat fusiform in shape, and situated immediately above and running parallel with Poupart's ligament. The tumour was dull on percussion, and gave no pain on manipulation. The integument over it and in its immediate neighbourhood exhibited nothing abnormal. The patient being in a very weak and sickly condition was at once placed on a nourishing diet, with cod liver oil and iron. While in this weak and emaciated state no local treatment was attempted, but under the above treatment he rapidly improved in general health.

The abscess increasing in size, Dr. Dunlop decided to make a free incision into it for the purpose of evacuating its contents. This he did on 2nd March with the usual antiseptic precautions, when there escaped about two ounces of pus of a perfectly healthy character. A drainage-tube was passed into the incision and the wound dressed antiseptically and put up in a spica. The drainage-tube was removed on the 4th, there being no discharge. The patient is looking much better since the abscess was opened, and the wound shows every indication of healing quickly and well.

II. Patrick M'C., æt. 20, moulder, admitted to Ward XV, complaining of a tumour in his right groin. The symptoms complained of are very similar to those of the previous case. Patient states that twelve weeks prior to his admission his attention was directed to the above mentioned tumour. It increased rapidly in size, and had the appearance and feeling of a cord. It was not attended by any pain. His general health did not suffer much. Patient is of the strumous diathesis of medium size, with a well developed osseous and muscular system. There are found scars of previous strumous abscesses on the left side of his neck. There was detected a large fluctuating tumour in the right inguinal region immediately above Poupart's ligament, and extending for about one and a half inches upwards and outwards from the crest of the pubis. The tumour was dull on percussion. The treatment of the patient since his admission, up to the present date, has been conducted on purely dietetic principles. The abscess showing no symptoms of abating, Dr. Dunlop decided to lay it open, which he did on 2nd March, 1880, under the spray, when there escaped about three ounces of an ovarian looking fluid. A drainage-tube was placed in the wound, which was then dressed after the usual antiseptic method, with a spica bandage. The drainage-tube was removed on the fourth day after operation, there being no discharge whatever. To-day, the 6th, there was a slight puriform discharge for the first time since the operation. The wound is nevertheless looking quite healthy.

Remarks.—These two cases were shown together as illustrations of strumous abscesses which, from their position, might readily have been mistaken for some other disease. The first case, that of the lad Munro, was specially interesting, as the swelling at first was limited to the inguinal canal, and from its shape and position it bore a kind of resemblance to an hydrocele of the cord. It was also considered to be an incomplete hernia. The points of distinction were clearly made out, and it remains to be added that the patients are now nearly well.

WESTERN INFIRMARY.

REPORTS UNDER THE SUPERVISION OF DR. W. G. DUN.

(FROM PROFESSOR GAIRDNER'S WARDS.)

RENAL DROPSY, WITH UNUSUAL COMPLICATIONS, EMBOLISM, &C. REMARKS.

I. ACUTE BRIGHT'S DISEASE: DYSPNŒA, WITH PULMONARY HÆMORRHAGE AND CONDENSATION: EMBOLIC INFARCTION IN RIGHT LUNG: PLEURISY WITH EFFUSION ON RIGHT SIDE.—G. R., aged 41, was admitted 15th March, 1880, with great œdema of feet and legs. His illness commenced, six weeks before, with swelling of the face and eyelids. The quantity of urine passed during the first twenty-four hours after admission was rather below normal, highly albuminous, and gave blood reaction with guaiac. Blood and hyaline casts were observed on microscopic examination.

The patient complained of pain in the lumbar region, from which he had suffered for many years, and for the last two or three years he had required to rise several times during the night to pass water.

Purgatives and a saline diuretic were ordered, and he seemed to be getting on tolerably well till the evening of the 20th, when he complained of difficulty in breathing, for which hot poultices were ordered, and he was propped up in bed. In the morning breathing was still more embarrassed, and his spitoon contained a quantity of frothy, thin mucus, copiously mixed with red blood. An examination of the chest revealed that, while over both fronts percussion was unaltered, the note in the dorsal region was dull, and particularly at the bases. The dulness was greater on the right side than on the left, and here also vocal fremitus was more marked. Abundant coarse, bubbling râles were heard over the whole back. In the evening his condition was even worse. Pulse 102. Respirations 50. Poultices were applied to the chest, and stimulant expectorants and brandy administered. On the following day no improvement could be noted. On the 23rd the sputum still continued tinged with blood, and the physical signs in the chest indicated rapid consolidation of the lower lobe of the right lung. The condition of the heart, as ascertained from a very hasty examination, the state of the patient not admitting of more, seemed in no way abnormal as regards the sounds, these being quite free from murmur of any kind.

No favourable change occurred in the condition of the patient. He continued to sink gradually, and died on the forenoon of the 25th. A *post-mortem* examination was made by Dr. Coats, who reports:—

Both kidneys were greatly enlarged, weighing about 10 ounces each. The capsule was non-adherent, and the surface rather pale, but with frequent red or brown dots, which, with the aid of the microscope, were afterwards distinguished as intra-tubular hæmorrhages. On section, the cortex was found to be greatly thickened, and, although not very pale, contrasted greatly with the pyramids, which were of a deep red colour. One of the kidneys was injected with a carmine gelatine mass, and although comparatively little pressure was used, the material escaped abundantly from the malpighian tufts into the convoluted tubules. In both ventricles of the heart there were globular thrombi of a pearly white colour, those in the right being the larger. In most instances these were partly concealed behind the muscular trabeculæ. In the middle lobe of the right lung there was found a hæmorrhagic infarction, occupying the anterior part of the lobe, and extending from the surface inwards. The branch of the pulmonary artery supplying this portion of lung was found plugged by a coagulum, which, in its first part, had a white colour, reminding one of the thrombi in the heart. The plug began about an inch nearer the heart than the apex of the infarction. The right pleural cavity contained a considerable quantity of turbid fluid, and a soft layer of fibrine covered the lower part of the pulmonary and parietal pleuræ, especially over the infarction.

II. ACUTE BRIGHT'S DISEASE—ALBUMINURIA AND DROPSY YIELDING EASILY TO REMEDIES—PROTRACTED CONVALESCENCE—REPEATED ATTACKS OF SLIGHT HÆMOPTYSIS, WITH SYMPTOMS OF PLEURISY ON THE TWO SIDES SUCCESSIVELY.—M. M., domestic servant, aged 27, admitted 3rd January, 1880. Her case was one of acute renal dropsy, beginning suddenly on 1st January, and following upon wetting five days before this date. Two days after the wetting she commenced to cough, and experienced at the same time, a little pain about the xiphoid. On examining the chest, nothing very definite was made out, beyond, perhaps, a slight degree of dulness at the bases of the lungs behind, and an audible but not very decided mucous crepitation at the left base. The condition of the heart appeared to be normal. Temperature 98° F.; pulse, 68; respirations, 30. When admitted she was passing an average quantity of highly albuminous urine. She was dry cupped over the kidneys; purgatives freely administered, and later on a saline diuretic. A decided diminution in the dropsy quickly occurred, the cough became less troublesome, and the patient seemed progressively advancing towards recovery till 16th January, when an acute exacerbation of the chest disease occurred. She complained of severe pain in the left side, impeding respiration. No friction sound was detected, but percussion was dull. There was no expectoration till the morning of the 20th, when some decidedly blood stained expectoration was found on the handkerchief, not, however, like the rusty sputum of pneumonia, but rather like incipient hæmoptysis. An examination of the chest gave no very definite results; no râles were audible, the respiratory murmur was impaired at both bases, probably, however, from superficial respiration being restrained by pain, and there was comparative dulness at the left base; the crepitus before noticed here was now absent. The cardiac sounds were feeble and rapid, but not abnormal. Face flushed; pulse 128; respirations 44; temperature on evening of 19th 101° F. This condition lasted for several days, when the temperature again fell, and the patient appeared to be recovering; the sputum, however, continued to contain a little blood almost every day. On 3rd February a relapse of the same kind again occurred, but only for a few days, so that convalescence went on satisfactorily until about 7th or 8th April, when she had a slight return of the pain, and a small amount of hæmoptysis. The face was flushed, and the skin warm and perspiring. There was no notable change in the condition of the chest, and nothing abnormal at the apices. During February and March an average quantity of urine was passed, and, since 31st January, albumen has only occasionally been detected, and in small quantity. The patient still remains in the hospital.

III. URGENT DYSPNŒA WITH ANASARCA AND ALBUMINURIA DUE TO A RECENT RENAL ATTACK—PROGRESSIVE RECOVERY FROM THESE SYMPTOMS, BUT, AFTER FIVE DAYS OF TREATMENT, SUDDEN LETHARGIC SYMPTOMS, SUCCEEDED BY RIGHT HEMIPLEGIA, ENDING FAVOURABLY, BUT WITH RIGID PARALYSIS OF FOREARM AND HAND PERSISTENT.—W. M., aged 8, was admitted 27th February, 1880, in an extremely exhausted condition, his state being that of pale lividity with orthopnœa. Pulse 160 or upwards, but regular; heart's sounds apparently normal. Respirations upwards of 60 in the minute, both lungs giving evidence of capillary bronchitis. Lips purple; slight puffiness of face; distinct anasarca of limbs, and rather extreme dropsical condition of penis and scrotum.

Urine passed in very small quantity, bloody to guaiac test, but not to the eye, and containing granular tube casts, and thin, pale uric acid crystals.

A warm pack had been given on the day of admission, but, when Dr. Gairdner saw the child on the following morning, his condition appeared so extreme as not to justify the further use of it, but only of small doses of brandy repeatedly administered.

A gradual but distinct improvement took place in all the symptoms till 3rd March, on which day he began to be very drowsy and heavy, very peevish if spoken to, and apparently scarcely able to articulate distinctly. His face was quite expressionless, and he made hardly any voluntary movements, but no convulsions were observed either in face or limbs. On the following day it was observed that he had completely lost the power of the right arm and hand, and that the right side of the mouth was also paralysed. He was able to move the right leg, however, quite freely, although the movements were somewhat slow. There was no decided rise of temperature coincident with this change; indeed, his temperature continued almost normal from admission, having only once reached 100° F.

While in the drowsy condition above described, he several times passed urine in bed. The bowels were constipated, and only moved after purgatives and an enema.

6th March.—Patient is somewhat livelier and better to-day. Facial paralysis still distinct, tongue deviating slightly to paralysed side, arm apparently totally paralysed. Pulse 70, full, and nearly regular. Respirations about 30, not laboured. Auscultation shows the persistence of a considerable amount of wheezing râle. Heart's sounds good, and free from murmur. Albumen much diminished in urine.

11th March.—Paralysis complete in right arm and hand, to the extent that he cannot stir a finger; very marked also in the right *orbicularis oris,* and the muscles affecting the right side of the mouth.

16th March.—There is a very marked improvement as regards the paralysis of the mouth—still, however, very distinct difference between the two sides, and distinct deviation of the tongue. Paralysis of the arm and hand continues complete, and the leg, if improving at all, so gradually improving, that the fact cannot be noted.

18th March.—Improvement is proceeding, the tongue only just deviating to-day, and the paralysis of the mouth being hardly perceptible. In the right arm there is observed a very distinct improvement since 16th inst., in respect that, though there is no voluntary movement of the fingers or wrist, he can work up the arm from the shoulder, though not from the elbow independently, by a strong effort of the will. There is a slight tendency to incurvation and stiffness of the fingers.

12th April.—There has been an entire absence of albumen in urine since the 8th of March, and improvement in every respect as regards the general symptoms, his state being now distinguishable from absolute health only by the persistence of the hemiplegic symptoms, which, however, have also undergone a further improvement. There is now only a slight paralysis of the right side of the mouth; no deviation of the tongue, nor of the uvula; and nothing at all otherwise influencing the expression of the face. He walks rapidly and well, though with a very slight halt; is in extremely good condition of body; and very merry and playful. No murmur or want of definition with either of the sounds of the heart. Auscultation and percussion of lungs normal. The most persistent paralysis is in the right forearm and hand, and especially in the extensors, which are imperfectly nourished and flabby, while the flexors, not being properly antagonised, are passing into a state of permanent rigidity, indicated by the impossibility of extending the fingers, his efforts to do so being followed rather by flexion than otherwise. Supination and pronation are almost equally difficult. The whole forearm and hand are now the chief seats of continuing paralysis.

The child still remains in the hospital, and further improvement is looked for by the use of galvanism and daily exercise.

Remarks.—In all of these cases, including even the one first recorded, which proved fatal, the usual symptoms of the acute or sub-acute form of Bright's disease were, up to a certain point, successfully met by the remedies used. In the fatal case of G. R. the amendment was short-lived, and not very well marked; nevertheless, the intense dyspnœa, and especially the hæmoptysis, which supervened five days after admission, were incidents so much out of the regular course of the primary disease, that Dr. Gairdner was led to make an inferential diagnosis of some cardiac complication, or, more probably, of embolism, to which the physical signs, however, so far as they could be examined, gave no positive support. The *post-mortem* examination verified this anticipation, and and at the same time showed that the source of the pulmonary embolus was not valvular, and therefore gave no positive sign to auscultation over the heart. Had the other two cases (one of which, indeed, preceded that of G. R. in the order of time) been recorded apart from the fatal case, it might, perhaps, have been regarded as overstrained ingenuity to refer them to a similar pathology; and even as it is, the pathology of the pulmonary complication in the case of M. M., and the cerebral in that of W. M., must be admitted to be doubtful. In both these cases, however, the primary renal dropsy and the albuminuria have undergone what may be fairly called a cure, under the remedies indicated; while there remains an unknown, or at least problematical factor of disease which, according to Dr. G.'s experience, lies out of the usual course of events in renal disease, especially when occurring in young subjects, and in the form variously called parenchymatous or intra-tubular. What is this unknown element? or is it similar in the two cases? In the case of M. M. the symptoms are, on the whole, very like those of G. R., only of much less intensity. The age of the patient is, it is true, more within the period giving probability to a theory of tubercular hæmoptysis; but the most careful scrutiny of the apices of the lungs fails to elicit any signs of disease, and all the other facts are against this theory; while the almost complete recovery from the renal symptoms, and the absence of any sign of cardiac disease, make it at least improbable that the source of the hæmoptysis is to be sought in a valvular lesion, or in dilatation of the heart. The same remarks apply, with perhaps even greater force, to the cerebral symptoms in the child W. M. Here, also, there is absolutely no sign, nor evidence of any kind, of tubercle. Notwithstanding his extremely threatening state on admission, the temperature, pulse, respiration, are now virtually normal; the dropsy, and after it the albuminuria, have entirely disappeared; the bodily condition is very good; the mind active and cheerful—the boy, in fact, is absolutely well in all respects, were it not for the hemiplegic paralysis which so distinctly conforms to the idea of a breach of continuity in the nervous connections passing through the internal capsule of the left corpus striatum; and this lesion, of sudden and well-defined origin on the 3rd-4th March, and uncomplicated by convulsion, can hardly be considered as falling within the limits of even a possible uræmic attack. Cerebral embolism is not, perhaps, antecedently probable in such a case, nor is it confirmed by any positive sign; but it is quite in accordance with the nature of the lesion of innervation, to which, moreover, it is difficult to assign any other or more probable cause.*—W. T. G.

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* As bearing on the subject of the connection of embolism with disease of the kidney, other than Bright's disease, the reader may refer to Dr. Finlayson's report in the *Glasgow Medical Journal* for January, 1874, on Renal Cases in Professor Gairdner's *Clinique*, 1872-73, p. 44 (where, however, the renal lesion was distinctly secondary to a rheumatic cardiac affection); and also, in connection with the first case here recorded, to the elaborate reports by Dr. Bristowe on softening clots in the heart, *Pathological Society's Transactions*, vol. vii, 134; xiv, 71; and a separate case in vol. xix, 90.

MEETINGS OF SOCIETIES.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.

SESSION 1879–80.

MEETING IV.—9TH JANUARY, 1880.

DR. FERGUS, *President, in the Chair.*

I. OPERATION FOR RADICAL CURE OF HERNIA IN CHILDREN.

PROFESSOR GEORGE BUCHANAN showed two children on whom he had performed the operation for the radical cure of hernia. He held that there was a certain proportion of cases in which, even with the best fitting trusses, and under the most watchful care, the hernia came down. In such cases operation was allowable. The operation which he was now to describe was a substitute for Wood's operation by pins. The procedure was as follows:—The patient having been put under chloroform, the rupture was returned and kept up by the finger of an assistant. A longitudinal incision was made along the whole line of the sac, from opposite the internal ring to the bottom of the scrotum. This divided the textures down to the peritoneal sac. The sac was then separated from its superficial structures, leaving the posterior part lying over the cord, which was seen behind. He then divided the sac into two halves by a transverse cut, except at the back, where it was adhering to the cord. One half was folded down over the testicle, so as to form a sort of *tunica vaginalis*. The upper half was rolled into a sort of ball or plug, which he pushed into the internal abdominal ring, and had it kept there by an assistant. He now approximated the ends of the inguinal canal, much in the same way as in the wire operation for the radical cure of hernia in the adult. Having previously pushed aside and slightly dissected the superficial structures from off the abdominal aponeurosis, the relations of the rings and the canal could be felt, and in great part seen. He took, then, a strong nævus needle, and pushed it through the external pillar of the canal at a spot opposite the internal ring; then, guiding it with the point of his left forefinger lying in the internal ring, he made it lift up the lower border of the internal oblique muscle, and emerge through the internal pillar of the external aponeurosis about half-an-inch above its lower edge. A strong waxed silk thread was now passed through the hole at the point of the needle, which was then withdrawn, pulling the thread with it. The latter was then tightly tied, including the structures through which the needle had been passed, and thus fixing into the internal ring the rolled up bit of the sac, care being taken that the external raw surface of the sac should be turned outwards toward the integument which was to cover it. A little below the first stitch, a second was introduced in the same direction, care being taken to avoid the structures of the cord which lay at the bottom of the wound. The edges of the external ring were now drawn together tightly above the cord by a third ligature. This was made to take a very strong hold, by passing the needle first through the external pillar, across the ring, and through the internal pillar. In making the internal puncture, he passed the point of the needle so far towards the linea alba as to make it pierce from below the tendon of insertion of the rectus muscle, so as to give a firm hold. The edges of the incision were now united with thin silver wire sutures, and the wound dressed with antiseptic precautions. The child was placed on a St. Andrew's Cross, the upper arms of which were joined by a sheet of calico on which the body rested; the legs being securely bandaged with strips of adhesive plaster to the lower limbs of the cross. The pelvis and chest were also securely fixed to the apparatus. The movements of the child were thus effectually controlled. The radical cure of the hernia was perfect.

Dr. Macleod said that he could bear testimony to the fact that the case of hernia of Dr. Buchanan's, which he had seen before treatment, was a very bad case, and that he had said that if such a case could be cured, we need not despair of any case. He differed, however, from Dr. Buchanan on one point —viz., whether a properly adjusted truss could effectually control every case. He thought it could; and he mentioned an instance in which he succeeded in controlling the hernia by a truss, after various trusses had failed, the defect of them being that they had not been exactly adjusted to the form of this particular child. He would therefore reserve the operation as a last resort, after carefully adjusted trusses had been tried and failed.

Dr. Watson concurred with Dr. Macleod in the opinion that by carefully adjusting the truss, almost any case of hernia in a child could be controlled But the management of the case by the mother or nurse must be very careful; and, for the children of the poor, they could not expect adequate management. In such circumstances, an operation which promises a radical cure, should be welcomed. He had performed Wood's operation with pins once on a child, and with as good results as those shown that evening by Dr. Buchanan. In another case of double hernia, in which he had operated in the same way, one side was satisfactory, and the other was hardly perfect; but the wearing of a slight truss was recommended, and the case did not return.

Dr. Macewen said that in two cases in the adult he had operated by Wood's method, in one with incomplete success, and in the other with the most satisfactory result. In another adult case he had operated by laying bare the internal ring, and bringing the pillars of the canal together with chromic acid stitches. It healed without a drop of pus, and the patient's condition was completely relieved. Mr. Wood alleged that the results of the operation by ligature of the canal were often published prematurely. The surgeon should wait to see whether the hernia would return. There was no doubt truth in this criticism, especially as regards the use of carbolic acid; but the case was different with catgut prepared with chromic acid, which resisted the action of the tissues for at least three weeks. In regard to the operation he would advance a step further than that occupied by Dr. Macleod, who would perform it only as a last resort. If they could save the patient much inconvenience, and also the chance of the hernia coming down, by a safe operation for the radical cure, they were justified in performing such an operation.

Dr. Graham, Paisley, mentioned a case of spontaneous cure of hernia in a child four years of age.

Dr. George Buchanan, in reply, stated that while he agreed that trusses should first be tried, yet he had occasion to see in hospital a great many cases in which, from whatever cause, they *had* failed; and the hernia has assumed a condition which made it impossible to be retained by any apparatus. His object had been by examples to demonstrate the possibility of performing an operation which enabled them to dispense with the use of a truss.

II. STONE IN THE BLADDER.

PROF. GEORGE BUCHANAN read a paper "On the importance of detecting the presence of Stone in the Bladder on the occurrence of the early Symptoms, and the Treatment by Lithotrity, with Illustrative Cases."

III. STATISTICS OF OPERATIONS FOR STONE.

DR. BUCHANAN also read "Statistics of the Operation for Stone in the Bladder in the Infirmaries of Glasgow, from the opening of the Royal Infirmary of Glasgow in 1795 to the present day. The general result was that, so far as he has as yet been able to compile statistics, there has been a mortality of one in about 7½ patients operated on by lithotomy.

Dr. Watson said that, having operated in a large number of cases of stone in the bladder, the larger proportion of them being cases of lithotomy, he had been much interested in the paper. With Dr. Buchanan he held it as axiomatic that the earlier the stone was detected the better for the patient, and also for the surgeon; and that lithotrity was, as a rule, the operation for small stones. In regard to the age he differed a little from Dr. Buchanan. He thought the operation of lithotomy, after the age of about 60, became less dangerous than between 15 and 60. Cases of return of stone after lithotomy were not unknown. That depended on the state of the kidney and the urine. Mr. Syme gave a case of return of stone after lithotrity. In 1848 he had the great advantage of studying under Sir William Fergusson, and saw him perform lithotomy several times. There could not be a more dexterous lithotomist; but it was noticeable that not a few of his cases died. This might have led him to look on the result of the operation as something of a mystery, as in the passage quoted by Dr. Buchanan. He saw no obvious reason for this fatal result. He (Dr. W.) believed that a great deal of the mortality was due to the particular mode of operation. He was convinced that Dr. Andrew Buchanan's operation by the rectangular staff was much less fatal than Chéselden's operation. The statistics given by Dr. Buchanan that evening, showing one death in every seven or eight cases all over, compared with his (Dr. Watson's) results was the proof of this. He had performed the operation by Dr. Andrew Buchanan's method sixty-eight times, with only three deaths. His sixty-eighth case had that day passed his urine by the urethra. In a paper in the *Lancet* some years ago, he had endeavoured to show that the perineal fascia ought not to be touched, and that the doing so was the cause of the large mortality after lithotomy. Fergusson cut freely, with a dexterous hand, and divided the perineal fascia extensively. When the constitution of the patient was not good, a very slight infiltration would produce sinking and death. The success of lithotrity depended greatly on the smallness of the stone; it was also of great importance that the stone should be crushed either at one or a very few sittings. If the fragments were all brought away at one time, the success of the case was all but ensured.

Dr. Graham, Paisley, said that, as surgeon of Paisley Infirmary, he could state that that institution had been almost exempt from cases of stone for several years. The introduction of gravitation water was believed to have had an important influence on the diminution of stone. During the last fourteen years there had been two cases of lithotomy in the institution. The nature of the first case was not inspected for some years till the patient came into the Infirmary. The removal of the stone was effected without much difficulty, though it was adherent to the mucous membrane of the bladder, and it required some force to detach it. The other case was that of a young child, and Dr. Andrew Buchanan's operation was successfully performed.

Dr. Foulis said that he had examined some seventy stones in the collection of Dr. George Buchanan in the Western Infirmary, and, since his appointment as pathologist of the Royal Infirmary, he had examined about 145 in addition. The composition of a calculus was far from being homogeneous. Besides the mineral portion, there was a very considerable admixture of mucus. On being dried a cavity would, in some cases, be seen in the centre, the mucus becoming dried and caked. The mode of formation of the stone in these cases appeared to be this. A lump of mucus, arising from a catarrhal condition, may have been rolling in the bladder, and round this flocculent mass there is formed a deposition of phosphates and other materials. This composite ball, acting in its turn on the living membrane of the bladder, reproduces catarrh, and it becomes coated with mucus. This passes off, and a fresh deposit taking place, the patient experiences a certain irritation from the rubbing of the calculus, which again leads to the formation of more mucus. By this means the irritation was lessened, and there might be even a cessation of the principal symptoms to be once more renewed as soon as the irritation was again set up. Of course, this explanation would not apply to all calculi; but, in some instances, the intermittency of the pain might be explained in some such way.

Dr. Macleod said that no doubt it was of the utmost consequence to recognise the early signs of stone in the bladder, or even the still earlier stage adverted to by Sir Henry Thompson in his work on prevention of the disease. But the unfortunate thing was, that the majority of cases occurred in young children; and even when recognised they could not employ lithotrity. A considerable number of cases must therefore be subjected to lithotomy. Dr. Buchanan's statistics had surprised him, as he had an idea that the mortality of this operation was much less than these represented. These statistics, however, were of no value to a surgeon as a guide to what he should do or avoid doing in any particular case. As to the value of lithotrity, he was not so clear as Dr. Buchanan. He thought that he could manage his cases carefully, yet he was not prepared to say that, taking into account the prolonged sittings, the necessary pain and suffering in getting out the fragments, were he himself the subject of stone in the bladder, he would not sooner submit to lithotomy. In disease of the kidney also, lithotrity was always dangerous. It had been averred, that had Sir Henry Thompson operated on the late ex-Emperor of the French by lithotomy he might have been alive to this day. He held that statistically the two operations were not comparable. The cases fit for the one differed essentially from those suitable for the other, He could not agree with Dr. Watson that oxalate of lime calculi were always crushed without difficulty. He had himself seen Dr. Watson break a lithotrite in the operation. In one case, he (Dr Macleod) had failed to crush the stone, and the patient had to be subjected to lithotomy, and recovered. It was then seen that the only impression which the exertion of his utmost force had made on the nodulated stone had been to break off a little knob. The median operation had scarcely secured the attention which it deserved. It is true it could not be used for large stones; but the results were good in cases in which it was applicable. In cases of children it was particularly useful. In general the diagnosis of stone was not difficult; but puzzling cases occasionally did occur. They were aware that even good surgeons had cut for stone where no stone was found. He questioned the accuracy of Dr. Foulis' description of the composition and mode of formation of a calculus. It was not a ball of mucus, but a blood clot that formed the nucleus. The colouring matter of the cavity showed that it had been originally a blood clot.

After some observations from Mr. W. H. Tennant,

Dr. Watson was allowed to explain the circumstances under which he broke a lithotrite in operating, as referred to by Dr. Macleod. The accident was due to a structural flaw in the instrument, as was proved by examination by an instrument maker. The patient was subsequently subjected to lithotomy, and the stone and the broken piece of the instrument were removed. This was one of his fatal cases. The man lived six or seven weeks, and died of erisypelatous sloughing.

Dr. Foulis, in reply to Dr. Macleod, said that he was quite familiar with the occurrence of blood in calculi; but his remarks referred to cases in which there was no blood.

Dr. Buchanan, in reply, said that he was quite aware that statistics afforded no clue as to the line of treatment in any particular case; but it was useful every score of years or thereabouts to submit their results to a numerical test. This had been the object of his paper. It was quite true that the two operations were in a sense not susceptible of fair comparison; and this would become more marked in proportion as the cases were examined early by the surgeon. For, when this was done, lithotrity would be oftener employed, and to the cutting operation would be relegated fewer cases, being those unsuitable for lithotrity, either from age, size of stone, or other cause.

GLASGOW PATHOLOGICAL AND CLINICAL SOCIETY.

SESSION 1879–80.

MEETING V.—14th JANUARY, 1880.

DR. ALEXANDER ROBERTSON, *President, in the Chair.*

DR. M'EWEN showed a boy on whom he had OPERATED FOR NECROSIS OF THE HUMERUS. The whole shaft had died, and after separating the epiphyses, the bone was removed subperiosteally. New bone was produced both at the upper and lower parts, but there was a gap of about 2¼ inches in the middle, in which no new bone grew. This remained, and about a year after the operation it was resolved to transplant a wedge of human bone into the gap. The bone to be transplanted was taken from the tibia in a case of osteotomy, and it was cut into small pieces, which were introduced into the arm between the two parts of the humerus. This was done antiseptically, and the wound healed without pus. Eight weeks have now elapsed, and although there is still a gap in the bone, it is less than formerly. The bone introduced, indeed, was not large enough to fill up the deficiency. It was simply an experiment to see what might occur, and the result has been so far favourable as to lead Dr. M'Ewen to the resolution to repeat the operation. The case illustrates the fact that bone can be transplanted.

Dr. Clarke saw the case before the transplantation, and could vouch that there had been an actual growth of new bone, and he thought it was the bone which had been introduced.

Dr. George Buchanan questioned if a large gap could be filled up in this manner, but he thought it might be of use in cases of ununited fracture.

Mr. Fleming asked what became of the bone that was transplanted? He imagined it would be absorbed, but replaced by a new tissue containing lymphoid elements, which takes on the character of the structure which it replaces.

DR. GEORGE BUCHANAN showed a FOOT AMPUTATED FOR MOLLUSCUM FIBROSUM. It occurred in a girl 20 years of age, and the disease had begun on the great toe nail, and gradually spread. She had had tumours of the same kind on her leg, which sloughed off.

Dr. M'Call Anderson did not think this a pure case of molluscum fibrosum, as the disease involved all the structures of the skin, and not the sebaceous follicles alone.

DR. M'CALL ANDERSON showed DRAWING AND MICROSCOPIC SPECIMENS OF TINEA IMBRICATA OR TOKALAU RINGWORM. Dr. Turner, in the *First Annual Report of the Samoan Medical Mission* in 1868-69, referred to a disease under the name of Herpes Desquamans. It is met with in both sexes and is very contagious. "It is," says Dr. Turner, "a scaly disease, much more like ichthyosis in its general appearance than any other skin disease. The scales, however, run in concentric circles, and may be well represented by taking a sheet of stout cardboard and shaving the upper layer of it in such a way as to make it curl up in circles. The rings of desquamated cuticle are about a quarter of an inch apart." It is associated with heat and intense irritation. The same disease is apparently described under the name of tinea imbricata, in a pamphlet by Dr. Patrick Manson, who says that it is principally met with in the Straits of Malacca or Islands of the Malay Archipelago. He has demonstrated its parasitic nature, which Dr. Turner supposed. The specimens presented were forwarded by Dr. Manson. He has succeeded in inoculating the disease. "After inoculation there is an incubation period of about nine days. At the end of this time the fungus has multiplied sufficiently to elevate slightly the epidermis under which it is growing, and forms a brown mass between it and the corium." It gradually accumulates till it bursts through the epidermis as a brown rim, perhaps very slightly elevated, and about $\frac{1}{16}$ of an inch in breadth. When the entire ring thus formed has attained a diameter of about half-an-inch, a brown patch is again seen to be forming at its centre; this in its turn cracks the young epidermis over it, and a second ring is formed inside the first, and so on *ad infinitum.* Unlike ordinary ringworm it does not usually attack the hairy parts of the body, and if it does, the hair follicles are not invaded by the fungus, and the hair continues firm, glossy, and natural. In tinea circinata the fungus is scanty, the spores few in proportion to the mycelium, and they are globular in shape, with the mycelial threads short, and having numerous swellings and constrictions and other irregularities in outline. In tinea imbricata, on the other hand, the fungus is present in very great abundance, and the chains of spores much more numerous than the mycelial threads. The spores also are oval, rectangular, or irregular, very rarely globular, and the mycelial threads are generally long, straight, or gently curved.

DR. CLARKE referred to a paper by Dr. M'Gregor, of Fiji, in the July Number of the *Glasgow Medical Journal* for 1876, in which a detailed account and figures of the parasite were given of "a new form of parasitic skin disease prevalent in Fiji." The description in this paper corresponded exactly with the account now given by Dr. Anderson.

DR. NEWMAN showed, BY MEANS OF THE SPECTROSCOPE, THE ABSORPTION BANDS CHARACTERISTIC OF OXO-HÆMOGLOBIN IN ITS VARIOUS DEGREES OF CONCENTRATION, of reduced hæmoglobin; and also, the spectrum of a substance found in some vomited matter which gave an absorption band situated between Traunhofer's D and F lines, close to F. In his remarks Dr. Newman described, with the assistance of a diagram, the different appearances seen, and explained the method adopted in measuring the position of the various bands, as follows:—The D and F lines of Traunhofer having been fixed as 50 and 90 respectively, the interspace between them was divided into forty parts, while the portions of the spectrum to the left of D and right of F were partitioned into degrees equal to these divisions. With these measurements as a standard, it was shown that the first oxo-hæmoglobin band extended, in a 4 per cent solution, from 50° to 54·5°, and the second from 63·5° to 72·5°, whilst the single band of reduced hæmoglobin occupied a position between 48° and 68°. The characters of the spectra differ according to the concentration of the solution of oxo-hæmoglobin, and, as the experiments of Preyer have shown, when the concentration is increased to 7 per cent the two bands approach one another and finally form a single band, at the same time, the more refrangible rays become absorbed. The single band given by the vomited matter extended from 79·5° to 90°, and therefore corresponds very closely in position with the bands given by Urobilin, and some forms of Lutein. It was further shown that when a 4 per cent solution of oxo-hæmoglobin was added to the vomited matter, three bands, the two oxo-hæmoglobin bands and the band peculiar to the vomited matter, were visible under the spectroscope, but after some time the oxo-hæmoglobin bands disappeared, and the third band became intensified and increased in breadth. When, however, a 7 per cent solution of oxo-hæmoglobin was employed, the bands peculiar to hæmatoin (the *eisenfreien hämatoporphyrin* of Hoppe-Seyler) became apparent during the transition stage. The disappearance of the two oxo-hæmoglobin bands takes from twenty minutes to half-an-hour for its completion when kept at about 60° F., but when a temperature of 90° F. was maintained, or an induced current passed through the mixture the change was much accelerated. The spectroscopic characters of the vomited matter or of the mixture of it with the oxo-hæmoglobin solution remained unchanged by the addition of strong or weak acetic acid, hydrochloric acid, or peroxide of hydrogen, but on boiling the solutions, or adding ammonia or soda solution, the band disappears completely. When ammonia sulphide was added, the solution became of a bright emerald green colour.

An explanation of the changes above described was reserved until the investigation is more completely carried out, the object in bringing the communication before the Society at the present time was to give the members an opportunity of observing the spectroscopic appearances whilst the materials were fresh.

MEDICAL ITEMS.

UNDER THE DIRECTION OF

ALEX. NAPIER, M.D.

The Pathology and Treatment of Hydrophobia.—Dr. Duboué, of Pau, who has written an exhaustive treatise on this subject, concludes that the virus is not absorbed, but passes insensibly along the nerves from the point of contact towards the spinal cord. It passes slowly centripetally, but, having reached the *medulla oblongata*, it returns quickly by the sensory nerves to the extremities. The symptoms of the disease begin when the poison reaches the medulla oblongata.

The duration of the period of incubation depends on the distance the poison has to travel from the wound to the bulb; it is shorter, therefore, in children than in adults, in wounds of the face than those of the limbs, &c. The earlier pathological changes are microscopic, and consist in an increased opacity of the nerve cells; and these cells, along with a certain number of nerve filaments, soon become granular. This is followed by congestion of various organs, more or less marked and visible to the naked eye. On this theory of nerve conduction, the author lays down the following line of treatment:—

1. To destroy the virus at the wound. 2. To prevent it reaching the medulla oblongata if it has not been previously destroyed. 3. Failing this, to lessen the sensibility of the medulla oblongata during the period of incubation; and 4. To continue this throughout the attack by the injection of various medicaments into the veins; to counteract, in short, the marked tendency to asphyxia.—Dr. Brochin, *in the Gazette des Hôpitaux.* 23rd December, 1879.—J. W. A.

Fuchsine.—Dr. L. Divet thus concludes a thesis (*Thèse de Paris*, No. 320, 1879) on the uses of fuchsine in chronic albuminuria, especially in parenchymatous nephritis.

1. Fuchsine is not a poison.

2. Pure fuchsine, or even the ordinary commercial fuchsine, as used in the coloration of wines, has no deleterious action on the organism.

3. In medium doses (5-15 ctgr.) continued for some time, it proves hurtful by eliminating through the urine such a quantity of phosphates as leads to a considerable degree of debility.

4. Its action as a diuretic is great, but not constant.

5. It has been employed successfully as a remedy in the albuminuria of cachectic subjects and of those suffering from cardiac diseases; in the case of a pregnant woman, who showed all the premonitory symptoms of eclampsia, and in several cases of parenchymatous nephritis, it proved equally useful.

6. It does not seem to yield favourable results in the treatment of interstitial nephritis.

Influence of Climate on Pulmonary Disease.—In an article on this subject, Dr. Thorowgood remarks that cases of phthisis may be divided into two classes. The first of these includes cases originating in catarrh and cold, or in some inflammatory attack in the chest, produced by cold; this is the variety prevalent in raw, cold countries. Patients thus affected derive benefit from residence in a mild climate, like that of Ventnor or South Devon; the great advantage of such a climate being, that patients can pass much of the time out of doors or at open windows with safety. The second group comprises cases of true tubercular consumption. For disease of this nature a dry, cold, pure, antiseptic atmosphere is necessary. Several illustrative cases are quoted in support of these views.—*The Practitioner.* March, 1880.

Action of Sugar, &c., on Calomel.—From time to time notes have appeared in various journals, warning against the changes said to be produced in calomel by sugar and various other substances with which it is often prescribed; while many therapeutists advise that so long as calomel is being taken, no salted food or acid drink should be allowed. M. Verne has submitted these views to the test of experiment; he made various mixtures of calomel with common salt (in solution), beetroot and colonial sugar, solution of citric acid, &c.; these he examined at the end of periods varying from 3-15 days. Although at the end of these intervals the mixtures he experimented with showed to the eye slight traces of change, chemically he could find no evidence of the presence of corrosive sublimate, or of any soluble salt of mercury. He refers such accidents as have been reported chiefly to impurities in the drug; as supplied to the chemist, calomel is usually, to some extent, impure, and should always be washed with distilled water and alcohol. The danger of giving acid drinks with calomel is purely theoretical; it was proved that the latter, when exposed for fifteen days to the action of a 20 per cent solution of citric acid, underwent not the slightest alteration. M. Verne concludes that the subchloride of mercury is a much more stable salt than is generally supposed; it is, in fact, more stable than corrosive sublimate, as solutions of the latter, when exposed to light and the influence of various organic substances, deposit calomel. Non-coagulated albumen, however, at the temperature of the human body, reduced calomel rapidly and easily, transforming it into a slightly soluble albuminate. Neither common salt nor sea salt, at 40° C., had any action on calomel, either when used alone or in the presence of albumen.—*Bull. Gén. de Thérap.* 30th March, 1880.

Treatment of Exophthalmic Goitre.—The case here detailed by Mr. R. Park, Glasgow, is interesting, as showing the marked effects of morphia hypodermically on the heart's action. The patient was a female, aged 36, a multipara, with a pulse of 160, and all the other signs of pronounced Graves' disease; she was said to have had no sleep for three weeks, on account of the cardiac turbulence. The treatment adopted was the injection of morphia hypodermically, the dose being regulated in conformity with the principle announced by Anstie, that when so administered, the drug declares its effects *immediately.* A sixth of a grain was therefore injected; no effect being apparent in five minutes, another sixth was injected; this was repeated, the syringe being *in situ* all the time, till two grains had been given. This proceeding lasted over an hour; shortly afterwards the patient fell into a comfortable sleep, from which she was always easily aroused. There was scarcely any obvious contraction of the pupils. The injection (of one to two grains) was repeated every few days for a considerable time, and in twelve months it was noted that the patient was "well and going about." The morphia thus seems to have been not only palliative, but remedial. Various physiological explanations of this action of the remedy are here furnished. It seems clear that morphia, used hypodermically, exercises great control over tumultuous cardiac action, whether due to a reflex or organic cause; but, for the full development of its action, large doses are frequently necessary. These effects cannot be obtained by administration by the mouth. Mr. Park has also given morphia in similar doses subcutaneously in acute mania, and with excellent results.—*The Practitioner.* March, 1880.

The Lithophone.—At a recent meeting of the French Academy of Medicine, Dr. Langlebert described a new instrument of his own invention, the lithophone, which he uses for the detection of stone in the bladder. This instrument consists of a small cylindrico-conical drum, formed of glazed cardboard, the smaller end of which is inserted, like a plug, into a sound, the upper part of which is hollow. Such is the resonant power of this apparatus, that the slightest shock or even grazing of the point of the sound against a calculus in the bladder is reproduced in greatly increased intensity in the drum, within which, indeed, it seems to be generated; with regard to the last mentioned point the illusion is complete, so that the bladder is brought, so to speak, directly under the ear of the surgeon.—*Bull. Gén. de Thérap.* 15th April, 1880.

Treatment of Placenta Prævia by Electricity.—Dr. Tuckerman describes two cases of placenta prævia, in the treatment of which the electric current seems to have been of considerable use. The first patient, a multipara, had been bleeding for two days; the os uteri was about the size of a quarter dollar, and above it the placenta could be plainly felt. She was treated as follows:—The foot of the bed was raised about twelve inches; as there were no pains, ergot was given, and the placenta separated from the lower zone of the uterus. The ergot proving ineffectual, one electrode of a small Gaiffe's induction battery was applied to the os, the other over the fundus; within thirty seconds this was followed by a vigorous pain, which expelled a handful of clots. The electrode over the fundus was then removed for a moment and reapplied, when another pain instantly came on. There was no more hæmorrhage. The alternate application and removal of the electrode in this way produced pains very like those of natural labour, and by means of them the os was dilated in about two hours. The membranes were then ruptured, and the child, which presented by the shoulder, was delivered by turning. Recovery perfect.

The second patient was a primipara: the os was dilated to but a very slight extent. The placenta was separated over the lower zone of the uterus, and the Faradic current used as in the previous case. The hæmorrhage, which had been going on, more or less, for a week or two, at once ceased, the os began to dilate, and, with no further interference, the child was delivered in about ten hours. The patient subsequently collapsed, but rallied slowly; she afterwards had phlegmasia dolens, from the effects of which she has not yet completely recovered.—*Med. and Surg. Rep.* 20th March, 1880.

Albuminate of Iron.—To prepare this substance the whites of one or two eggs are beaten up with about five ounces of water, while in another vessel six drops of the solution of chloride of iron (German Ph.) are dissolved in an ounce of water. The iron solution is then added gradually to the albumen, the mixture being continuously and vigorously stirred meanwhile. If the stirring be properly conducted, the resulting solution will be almost perfectly clear, but a few drops of hydrochloric acid will at once remove any cloudiness. The fluid, filtered if necessary, is then brought up to six ounces, when a tablespoonful will contain one half drop of the iron solution. The albuminate may be dried into thin scales, and powdered. The fluid preparation, given in doses of a tablespoonful thrice daily, is often retained when the stomach is so weak and irritable as to tolerate no other preparation of iron. It may be given hypodermically, in doses of $\frac{1}{3}$ grain or more. (Dr. Donitz in *Berl. Klin. Woch.*)—*Med. and Surg. Rep.* 28th February, 1880.

Improved Operation for Lacerated Perineum.—With a scalpel a V-shaped incision is made through the integument, along and immediately to the outside of the lacerated border; then, seizing the apex of this triangle, the point of which, of course, is just in front of the anus, with forceps or a tenaculum, the skin from the part to be denuded is dissected up in a single triangular flap, which is left attached by its base to the posterior wall of the vagina. The flap is then lifted and kept out of the way by an assistant, while the cut edges below it are brought together and secured by sutures. The flap will now be found to be retracted from before backwards, and folded on itself from side to side; its apex barely reaches to the osteum vaginæ, and the two lateral halves of its raw surface, being brought into apposition, quickly unite. Treated in this way, the flap roofs over the wounded parts underneath, and protects them from vaginal discharges; ultimately it becomes a solid raphé, reinforcing the new-made perineal body. Horse hair sutures are the best, being easy of adjustment, secure, easy of removal, and painless while *in situ*; two horse hairs, doubled so as to make four strands, will always hold. They should be removed on the seventh day. —Dr. E. S. Bunker, in *Annals of Brooklyn Med. and Surg. Soc.* March, 1880.

Hereditary Congenital Cataract.—At a recent meeting of the St. Louis Medical Society, Dr. A. D. Williams reported a case of congenital cataract, the interesting point in connection with which was the family history. The patient's grandfather suffered from this disease, and had four blind children and some not blind. The patient's father was one of the four blind, and had five children, two blind. Patient himself is one of these two, and has four children, three of whom are blind. The uncle had seven children, three of whom are blind. An aunt had two blind children. The disease had thus run through four generations, and had produced fifteen cases of blindness. The man was very imperfectly acquainted with his family history; if it were fully known, possibly other cases would be discovered.—*St. Louis Med. and Surg. Journal.* 5th April, 1880.

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ORIGINAL ARTICLES.

INTESTINAL OBSTRUCTION, EXISTING FOR NINE MONTHS, CURED BY COLO-PUNCTURE.

By JOHN M'GOWN, M.D., Millport.

(Read before the Medico-Chirurgical Society, 6th February, 1880.)

Mr. President and Gentlemen,—I have brought this case under your notice because it presented some peculiar features, which I have not seen noticed in any of the recently published cases of intestinal obstruction: also on account of the remarkable change that took place in the condition of the patient immediately after the operation; and because the patient, being resident in my own house, was under my constant observation during the whole period of the disease. The patient in this case is a gentleman who has been resident with me for the last eighteen years. During all that time he has enjoyed excellent health; his habits are very regular; and, being a gentleman of independent means, he has not been subjected to the mental or physical strain of most men who have reached forty-five years of age. The first symptom noticed was about the month of March. At that time he began to refuse his food, had slight diarrhœa, and the abdomen was somewhat tympanitic. He complained of no pain at this period, nor at any time during the whole course of the disease. The diarrhœa continued, more or less, during the nine months he was ill. Thinking the illness was owing to some slight derangement of the stomach, I tried all the medicines usually given in such cases—still, the diarrhœa continued, and the distension of the abdomen increased. He still complained of no pain. He had no vomiting, unless when forced to take more food than he liked. The constant diarrhœa, and taking little food, produced great emaciation. A remarkable feature of the case was that, about five minutes after he took any food, a loud click-clicking sound was heard. The sound was such as can be produced by a quart bottle full of fluid being laid on its side, and allowed to empty itself in that way. The sound was produced by the fluid passing through the obstructed part, wherever that might be. The mechanical pressure of the gas on the kidneys and blood-vessels of the abdomen produced a whole train of peculiar symptoms. The legs became very œdematous three months after the disease was first noticed; and, at the end of nine months, they were greatly swollen, the skin blistered in several places, and fluid oozing from them. The heart's action was very feeble. The pulse had gone down to 40 in the minute. No trace of albumen was found in the urine during the whole course of the disease. There was no difficulty of breathing, unless he attempted to exert himself in any way. The great pressure in the bowels produced a very large inguinal hernia on the left side. This could be easily reduced, but no truss could keep it up, on account of the great pressure. About the month of June, the disease now going on for five months, and having failed to relieve the distension, which was now very great, I passed the tube of the stomach pump up the descending colon for nearly two feet, and let off a large quantity of flatus. After the gas was let off, I injected a gallon of tepid water into the bowels through the long tube. I continued to do this every eight days for about two months; but latterly it required to be done every three or four days. I had great difficulty in introducing the tube at first, both on account of the unwillingness of the patient, and from the contraction of the sphincter ani; but, latterly, I introduced the rectum speculum first, and then passed the tube through it with the greatest ease to myself and the patient. During the month of August, I had the advice and assistance of several medical friends who were spending their holidays here. Dr. Kirk, of Partick, suggested that I should give the extract of belladonna a fair trial, which I did, without any good result. Opium had been given in large doses at an early stage of the disease, with a similar result. I now sought the advice of Professor Gairdner, of Glasgow, who came and saw the patient. He suggested my asking Dr. Cameron to see the case. Dr. Cameron and Dr. Grieve saw the case eight days after Dr. Gairdner. Dr. Cameron suggested puncturing the bowels; but, as I had been taught that that was a very dangerous operation, and one that should not be performed until all other things had failed, I did not consent to its being done. I was still able to partly relieve the distension with the long tube passed per anum.

In the *British Medical Journal* of 27th September, 1879, several cases of intestinal obstruction were published; and, as they had a direct bearing on my case, I read them very carefully. I was very much struck by what Dr. Goodhart said to his students in a lecture delivered at Guy's Hospital, when speaking about the operation of *colo-puncture*. Here are his own words, taken from the journal just referred to:—"You may perhaps think that some less hazardous means of relieving the distension than that of colotomy might be adopted, and another operation has been practised with that end in view—viz., paracentesis.

"The distension is due partly to gas and partly to fluid fæces; and it has been thought that, by withdrawing the former, the severity of the case might be relieved. One of the distended coils has therefore been tapped by a fine trocar and canula, but there can be no doubt that this is an exceedingly dangerous thing to do; and I do not, from what I have seen and from what others have told, feel in the least inclined to recommend it to your notice. The danger is this, that the distension is, in the majority of cases, but little relieved; that alone is an objection fatal to its adoption. And the bowel remaining full, and its walls tightly stretched, fæcal matter, which you remember I told you is *always* liquid, leaks out into the peritoneum after the withdrawal of the canula from even the smallest puncture. I have myself seen this operation performed; and fæcal matter came out by the canula at once; no relief followed, and the patient died not long afterwards of acute peritonitis. So, do anything rather than this. You are taught, and quite correctly too, that small wounds of the intestine are comparatively dangerless, because the mucous membrane becomes everted, and so closes the aperture; but this only applies to a contracted intestine; but we are dealing with an over-full one. All the coats are, in such a case, distended probably to their utmost, the rugæ obliterated, and there is nothing to evert; and the smallest hole, under such circumstances, becomes a vent, and a vent, however small, in such a position, is fatal."

I called Dr. Cameron's attention to the articles published in this number of the *Journal.* After he had read them he told me he would come and see the patient, and do whatever might be considered best under the circumstances. Notwithstanding Dr. Goodhart's teaching, colo-puncture was agreed upon. The patient was placed on his back in bed, the position he always lay in since his illness. No chloroform was given, wisely I think, as you will hear shortly. Dr. Cameron thrust in the trocar and canula into the middle of the transverse colon; the gas blew off for a few minutes, and the bowel was about half emptied of gas, when the bowel was strongly drawn to the left side by its own peristaltic action; the canula was laid down on the walls of the abdomen, and liquid fæces began to escape from the canula. Dr. Cameron placed his thumb on the mouth of the canula, and then injected a small quantity of tepid water through the canula into the bowel. He now withdrew the canula, and placed a small piece of adhesive plaster over the wound, and we left the patient in bed. We did not consider the operation very successful, as the gas was only partly liberated.

But now comes the wonderful part of the case. Three hours after the operation the patient had a very copious discharge from the bowels of dark clayish liquid fæces, followed by a second, one hour after the first. Seven hours after the operation, a large quantity of gas was passed per anum, and by next morning the abdomen was quite flat, and the distension completely gone. The kidneys now began to act vigorously. The ordinary chamber utensil was filled three times in sixteen hours; and, at the end of three days, all the œdema in the limbs had disappeared. The heart's action was now greatly increased; the pulse rose from 48 to 70 per minute. The patient has improved every day since the operation, and is gaining flesh rapidly. Wherever the strangulation existed, I am of opinion that the bowel liberated itself at the time of the operation. Had chloroform been given, the peristaltic action of the bowel might have been reduced, and the operation might not have terminated so well. Had this operation been delayed much longer, the patient could not have lived many days. I look upon the case as another of the triumphs of surgery; and should a similar case present itself to any of my medical brethren, I hope they will not hesitate to give their patient immediate relief, and the chance of complete recovery by the operation of colo-puncture. (*For the discussion on this paper see the Reports of the Medico-Chirurgical Society in this Number.*)

ON TWISTING OF THE INTESTINE AS A CAUSE OF OBSTRUCTION.

By JOSEPH COATS, M.D.

The reading of a paper, by Dr. M'Gown, in the Glasgow Medico-Chirurgical Society, in which a very peculiar case of intestinal obstruction is described, has suggested the following remarks. I believe that in the minds of medical men the possibility of twisting is seldom present as a cause of intestinal obstruction, and that mention is made, in a vague way, of "bridles of lymph," "adhesions," and such like, much more frequently than actual observation in the *post-mortem* room warrants.

Twisting of the gut is most frequent in the sigmoid flexure, and the explanation of this is to be found in the anatomical relations of this portion of the intestine. It will be remembered that the upper and lower ends of the sigmoid flexure are firmly fixed against the posterior and lateral wall of the abdomen, and that these two extremities are attached close to each other. The flexure itself passes out from its upper attachment, and returns nearly to the same place, forming a loop with a comparatively narrow neck. It will be easily understood that a loop with such relations will get more readily twisted than in situations where the extremities of the loop are distant, and at the same time freely movable. It will also be understood that, if a loop of intestine becomes altered in its relations in such a way as to approximate to the sigmoid flexure in the above mentioned regards, it will become much more liable to twisting than it was. This will be illustrated in the second of the cases about to be related. It will further be apparent that an obstruction due to twisting will be, as a rule, much more readily resolved than one due to such causes as internal strangulation, obstruction by tumours, &c., and perhaps this is the reason that this form of obstruction is so seldom taken into account, *post-mortem* examination revealing it in a much less proportion of cases than it actually occurs in. The cases about to be related may, in this view of it, be regarded as all the more important.

The first case was one of twisting of the sigmoid flexure, and to Dr. Yellowlees I am indebted for the opportunity of examining the parts, as the patient was an inmate of Gartnavel Asylum.

The patient was a demented old man, from whom it was impossible to get a good account of his illness. It was ascertained, however, that, on two previous occasions, he had complained of obstruction of the intestine, from which he recovered, and that this attack, from which he died, was the third. It could not be ascertained when the bowels were last moved, but he began to complain of uneasiness and pain in the abdomen about a week before death. There was no vomiting throughout, and the most prominent symptom was an enormous flatulent distension of the abdomen. For this, colo-puncture was twice performed, but without apparent relief; injections were given per anum, but they came away with very little fæcal matter.

At the *post-mortem* examination, the distension of the abdomen was exceedingly striking. On laying open the abdomen the distension was seen to have been produced almost entirely by the extraordinary dilatation of a single loop of intestine which was found to be the sigmoid flexure. It is difficult to convey a due impression of the amount of dilatation of this portion of gut. It seemed to fill the abdomen, and its diameter was not less than that of a well developed thigh. The course of the bowel was most readily traced from the rectum upwards, and this limb of the loop passed right up into the left hypochondre. Here it made a sharp bend, and returned still much dilated. At its lower extremity this limb twisted round the other and then passed backwards to become continuous, in the normal way. with the descending colon, which was in its usual position. The great distension of the flexure had dragged the rectum greatly upwards. This, of itself, considerably narrowed its calibre, which was still more obstructed, but not completely so, by the twisting of the intestine round it. It is to be here particularly observed that the actual twisting involved mainly the upper limb of the loop, so that a tube might have been passed upwards into the sigmoid flexure without meeting any serious obstruction, except by the pressure of the portion of intestine passing round the neck. It was found comparatively easy to untwist the flexure, and it was thus more definitely made out that it had twisted on itself, making two half turns. At the point of twisting the gut was considerably narrowed, especially at the lower extremity, where the sigmoid flexure passes into the rectum, and here there was some thickening of the peritoneum; but, after untwisting, water passed freely through the narrowest part.

Further comment on this case is hardly necessary; but I may be allowed to observe, in relation to Dr. M'Gown's case, that the condition of parts offers an explanation of how the relief of the flatulent distension, by means of a rectal tube, might have been unsuccessful, while its relief by colo-puncture might have succeeded. A tube passed upwards, by holding the intestine in position, might actually prevent untwisting during the collapse, while a relief of the distension by puncture from above would in no way interfere with it.

The next case is one in which the existence of twisting is rather inferred than actually demonstrable. In relation to it, also, a somewhat interesting obstetrical question comes up—namely, the association of pelvic abscess with intestinal obstruction. In this view of it, and with the kind assistance of Dr. W. L. Reid, the history of the case will be more fully detailed.

The patient was a healthy woman, married at 31, and confined, naturally, of her first child, a boy, about a year after marriage. Exactly two years afterwards, on January the 3rd, 1876, she was confined of a second boy, and this, also, was a natural labour. On the third day, fear of an accident to one of her children caused her to get up suddenly and cross the lobby in her night dress; she remained for some time in this condition, and immediately after returning to bed was seized with a rigor, followed by high fever. This was succeeded by signs of pelvic inflammation of such a serious character as to cause delirium; but it was only after about three weeks that the presence of pus was detected above Poupart's ligament on the right side. Pus was withdrawn by the aspirator at intervals of two to three days, the quantity removed on each occasion varying from 3 to 6 oz. This treatment lasted some seven weeks, and in all, about 80 ounces were withdrawn. Most of the punctures were made above Poupart's ligament, but the last few below it and towards the inside of the thigh. Ultimately, the little pus that remained was absorbed. Recovery was slow, and there was, especially, prolonged incapacity of the right leg; but by the beginning of autumn she was able to walk about slowly. Menstruation was resumed about July of the same year, and continued till her last illness.

During the next four years she enjoyed good health, but is stated to have suffered occasionally from constipation of the bowels, accompanied by considerable pain, but these attacks were overcome by the aid of ordinary purgatives, without medical advice being sought.

On 31st December, 1879, Dr. Reid was sent for, and found that she had been suffering from constipation for several days, which had been accompanied by pain, from the 29th. The abdomen was considerably swelled and tympanitic, but not acutely tender. The constipation continued for rather more than a week, accompanied, during the last four days, by stercoraceous vomiting, but never with extreme abdominal tenderness, or great constitutional depression, the temperature never rising to 101° F. At this period, Professor Gairdner saw the patient on two occasions, and, in view of a possible connection of the constipation with the old pelvic abscess, Dr. Matthews Duncan was communicated with. After continuing for about eight days, the constipation was relieved on the use of large and frequently repeated enemata. For the next three days she seemed to improve as rapidly as could be expected, and then she suddenly became insane. After remaining more or less maniacal for five days, she was removed to Gartnavel, where she continued somewhat violent till three days before death, which occurred twenty days after her admission. Death was preceded for two days by signs of peritonitis, which at one time relaxed considerably, so that, at the last, the fatal issue was somewhat sudden.

Considerable interest was excited to determime what connection might exist between pelvic cellulitis and intestinal obstruction.

The *post-mortem* examination revealed, in the first place, a general acute peritonitis. On searching for the cause of the former obstruction of the bowel, attention was soon directed to a loop of intestine, which presented a remarkably dark colour, and which turned out to be the last part of the ileum. On examination, it appeared that the pelvic cellulitis had extended upwards from the pelvis into the abdomen, and had caused considerable thickening and condensation of the peritoneum and mesentery, especially in the neighbourhood of the pelvis. By this inflammatory process, the loop of ileum already referred to had become fixed, at its upper end, to the posterior wall of the abdomen, close to the cæcum; and in this way the upper extremity of the loop was brought close to the lower extremity, and rendered immobile there. It is to be observed, further, that, as the cæcum has no mesentery, the lower extremity of the ileum is comparatively fixed at its termination in the cæcum. The loop of intestine concerned was thus brought into a condition somewhat similar to that of the sigmoid flexure, in respect that its two extremities were brought near together, and rendered immobile. Under these circumstances, it is probable that this loop of intestine, which had undoubtedly been partially strangulated, had been the seat of twisting—and, indeed, at the *post-mortem* the loop still presented a slight twist.

On opening up this loop of intestine, it was seen that, at the upper and lower extremities, but especially at the upper, a partial separation of the loop was taking place. At the upper extremity a deep line of separation existed, which penetrated through the mucous membrane, at one part even through the peritoneum, where a slight perforation had occurred, doubtless the cause of the acute peritonitis. The line of separation at the lower extremity—that is, immediately above the valve, was not so deep, but it penetrated through the entire thickness of the mucous membrane. It is to be added, that the tissues of the pelvis were found greatly matted together; the Fallopian tubes were bound down along the posterior and lateral walls of the uterus, and the ovaries buried in thickened tissue, so that it was difficult to make out the relation of parts.

No constricting band or other cause of strangulation was discovered.

ON INFLUENZA: ITS SYMPTOMS, VARIETIES, AND CAUSES, FOUNDED ON SIX YEARS' EXPERIENCE OF THE DISEASE.

By FRANCIS HENDERSON, M.D., Helensburgh.

(*Continued from page 365.*)

I. On the Phases of Influenza, with Illustrative Cases, *Continued.*

(C.)—*Cases in which the Alimentary Mucous Membrane was Affected.*

Under this heading three classes of cases may be distinguished:—1st. Cases in which the catarrhal affection was chiefly confined to the stomach. 2nd. Cases in which the catarrhal affection was very general over the whole alimentary mucous membrane. 3rd. Cases in which the catarrhal affection was chiefly in the lower bowel and rectum.

1st. *The Catarrh Chiefly Confined to the Stomach.*—Cases of this class varied much in severity, duration, and also in mode of onset. Those that began with a sharp rigor, and considerable pain in the stomach and vomiting, were usually shorter in duration, although not invariably so. Generally speaking, in the severe cases, the patient showed some falling off in health for some time before the symptoms took distinct form. For a few weeks, and even months, he seemed depressed and out of health, then he began to complain of a feeling of "horrid" sickness about the stomach, with occasional pain across the epigastrium. When the pain was present it was much increased by pressure, but, at the times when pain was not present, pressure was not usually complained of. There was always more or less sensitiveness to cold and sudden glows of heat over the surface. These symptoms were accompanied by a feeling of general wretchedness, which betrayed itself on the countenance. Very frequently fits of sneezing and some sore throat preceded the gastric symptoms by a day or two, as if the catarrh had travelled downwards; but generally when the gastric symptoms were at the stage described, the throat was not complained of, although its lining membrane would generally be found injected and swelled. At this stage the patient took to his bed, either voluntary or acting under advice, and very soon he expressed his sense of diminished wretchedness, although the gastric symptoms might continue very decided for another week or two. The sickness soon ceased to go the length of vomiting. If vomiting did occur, a large quantity of mucus was brought up from the stomach, demonstrating its catarrhal condition. Some pain of an intermittent neuralgic character often continued about the stomach; it had its seat, not unfrequently, about the costal cartilages bordering the epigastric region. Uneasiness and even pain were often felt when firm pressure was made by the edge of the hand in the line that separates the epigastric from the umbilical region. The tongue was always *large*, swelled looking, and generally rather red; its edges, and sometimes the whole surface, as if covered with minute blisters. As the symptoms abated, the tongue toned down in colour. Not unfrequently the tongue was very soft and creamy looking on the surface, although red at the point; more rarely it was pale and flabby. In this form of illness the bowels were generally constipated; but along with this there was occasionally some irritation about the rectum, causing pain at defæcation. At such times the evacuations were coated with mucus. In other respects the evacuations were remarkably natural. The urine was rarely diminished; much more frequently it was more abundant than natural, and having a low specific gravity. Along with the catarrhal and local symptoms, a certain degree of irregular pyrexia continued. It was of a low pitch; the temperature rarely exceeded 100° or 101° Fah., and was at times subnormal. Perspiration, often profuse, followed the pyrexial attacks. The pulse was always weak. It varied much in rapidity at different times, and was often much below the patient's pulse while in health. The general and the local symptoms were at all times most closely associated. They abated together, and then, after an irregular interval, they returned usually in a less degree of intensity; again they abated, and again returned. This process went on for a variable period, according to the degree of the seizure, the constitutional tendencies, and previous health of the patient, and the *means used.* In a bad attack, the average period of confinement to bed was from *seven* to *nine* weeks. After the first week or two of bed, the patient took his food fairly well. The peculiar sickness was often relieved by food. A common complaint was not hunger, but emptiness, which induced a kind of appetite, and, during the last half of the confinement to bed, the patient usually ate astonishingly well, and the general nutrition of the body was strikingly well maintained. With regard to all these cases, it was quite plain that the presence of catarrh in the stomach, except that it gave rise to certain of the symptoms, had no great influence upon the course of the illness, and had nothing to do with the essence of the disease; for, in most of the cases, it practically ceased, after the first few weeks, long before the disease had exhausted itself. Besides, cases were observed where the catarrhal symptoms were not at all, or scarcely, recognisable, which were, without doubt, cases of identically the same disease—*i. e.*, the result of the same kind of poison. Under heading D, illustrative examples will be found.

2nd. *Cases in which the Catarrhal Affection was very General over the Whole of the Alimentary Mucous Membrane.*

Some of these cases were acute, and others chronic. For example:—

Case VIII.—Five servants in a house in this neighbourhood were simultaneously seized with illness. On visiting them on the following morning, I found them all in bed. Four of the five had had vomiting and frequent action of the bowels, with shivering and fever. Two were quite prostrated, felt hot and cold by turns, and had sharp pyrexial symptoms. All that day and the next they could retain nothing on their stomachs, even water was immediately vomited. The bowels were very loose, frequent, brown watery discharges *at first*, and farther on in the illness a good deal of mucus was passed. There was constant pain all over the abdomen, which was everywhere tender to pressure. At intervals the pain was much increased, requiring the free use of opiates, &c. After partial recovery, these cases had several relapses of all the symptoms in less degree, the relapses beginning with shivering, and were not fairly convalescent for two or three weeks.

The fifth patient of the group I found also in bed, feeling unaccountably weak and depressed; she had chilly feelings, and was giddy and weak if she attempted to rise; but *she had no vomiting or diarrhœa*, or pain in the stomach. This patient had to remain in bed for several days. Her case forcibly illustrated that the vomiting and diarrhœa were not the cause of the prostration in the other servants, but were a *non-essential accompaniment* of the seizure.

Similar cases occurred about the same time in other houses in the neighbourhood, proving that the poison at work was not connected with any particular house, or set of house-drains, nor with poisonous articles of food, of which they might have partaken in common, nor was the complaint traceable to the water supply, because that came from entirely different sources in several of the different houses. The ordinary air was, without doubt, the vehicle by which the poison was conveyed in these instances. This form of attack was frequently met with among children. It differed from ordinary bowel catarrh in the suddenness of the seizure; in the absence of any sufficient cause, such as exposure to cold; in the degree of debility and lassitude being out of proportion to the duration and severity of the other symptoms; in the strong tendency to relapse, and in its infectious character, exhibited by its making a round of the nursery. General catarrh of the intestinal mucous membrane was also observed in a more chronic form. The following is an example.

CASE IX.—A strong active domestic servant, one of a family of twelve, who were all grown up, had for several months suffered from symptoms of the prevalent influenza—viz., slight cold creeping over the surface of the skin, followed by glows of heat, accompanied by feelings of weakness, a *raw* throat, dry in wakening in the morning, and occasionally sore. These symptoms continued for several months without any medical treatment, as she considered herself strong, and did not wish to give in. Latterly, she cleared up a large quantity of mucus from the throat, to such an extent as nearly to cause vomiting.

The above account she gave of herself when I was first consulted. She had lost flesh considerably; she had little appetite, and complained of pain over the bowels. They acted irregularly, and she had observed a quantity of the same sort of matter as she hawked up from the throat passed by stool. She had slight feverishness. I advised her to go to her home and take to bed. This, however, she did not do. She got worse, and in the course of another week was laid up in the house of her master. Her symptoms did not alter much, but continued and became aggravated. She passed every day a quantity of yellow mucus from the bowels. Sometimes enormous quantities, and at least on one occasion, a considerable amount of blood. Numerous remedies were tried, which seemed for a time to have a beneficial effect. Among these may be specially mentioned, "Sparkling Koumis." Decided remissions occurred, which more than once raised hopes of amendment; but ultimately, after about three months' confinement to bed, the patient gradually sank, exhausted and extremely emaciated. Unfortunately, there was no *post-mortem*, but there were no discoverable signs during life of disease in the important organs.

The lesson taught by this case is very evident. There is no reasonable doubt that if the patient had taken proper care, and had been suitably treated at an early stage of her illness, she would soon have thrown it off; but she made light of her symptoms for many months, and trusted to her naturally robust health.

3rd. *Cases in which the Catarrhal Affection was chiefly in the Lower Bowel and Rectum.*

Case X.—A lady, between 60 and 70, was suddenly seized with this form of illness. She passed blood and mucus frequently, and in considerable quantity. She had pain, increased by pressure, in the hypogastric and left iliac regions. These symptoms were accompanied by heat of skin and a weak soft pulse. The bowels were very constipated, and when evacuations were obtained by castor oil, they were deficient in bile. The tongue for the first few days was thickly coated with a white fur. The local symptoms lasted, with intermissions, for several weeks; and even after six or seven weeks, mucus was passed by stool, and the bowels only acted with medicine. The state of the tongue, appetite, pulse, likewise varied, getting better and worse, simultaneously with the bowel symptoms. This case might appropriately be called a case of dysentery, with numerous relapses, and, taken by itself, its connection with influenza is not apparent. But within a fortnight of the commencement of this lady's illness, her sister, a few years younger, an inmate of the same house, was suddenly attacked with sharp feverish symptoms (temperature about 103°), and violent pain in the stomach and bowels, followed by vomiting and diarrhœa; the latter accompanied by a considerable quantity of mucus and a little blood. These bowel symptoms soon abated, and after slight returns during the next few days, they ceased altogether; *but the patient did not get well* immediately. She lay in bed for some weeks, tucked in under the blankets from great sensitiveness of surface and disposition to experience creeping feeling on the slightest exposure. This condition was alternated with glows of heat and *burning in the palms of the hands.* This patient's appetite and digestion got into very good condition long before she was able to leave her bed.

A third case, similar to the last, although much slighter, occurred in the same house at the same time, and helped further to confirm the opinion that these cases were originated by a common cause. This view has been corroborated by several observations of the same kind, and if we refer to the histories of the epidemic influenzas, we find that the near connection of these complaints is generally recognised. Thus, Sir H. Holland speaks of the "frequent occurrence of dysenteric symptoms (often a well marked form of the disease) during the progress of the influenza, or it may perhaps more justly be said in sequel to the ordinary course of the epidemic. The description by Sir G. Baker of the very severe dysentery which prevailed in London after the influenza of 1762 is well known. The facts here are so well established by their repetition, that it is difficult not to suppose a direct connection either *in the nature of the cause*, or in a liability created by the prior disease to be affected by the ordinary causes of the latter." *

(D.)—*Cases where the Catarrhal Symptoms were almost or entirely absent or unrecognised.*

Cases of this variety also exhibited great differences, as regards both the duration and severity. Some were very prolonged. For example:—

CASE XI.—A healthy, although not robust, young man, aged 19, after a week of cold, shivery feelings, headache, and pain in the bowels, gave in, and went to bed on the 3rd of May, 1878. On seeing him the following day he was sharply fevered. He complained of headache and giddiness, sore throat and fits of coughing; also of pain in his stomach, which was present for a few hours at a time, and then quite away. The pharynx was slightly red and raw looking. In a day or two the sore throat and coughing ceased to be complained of. The fever, from the first, was remittent, and gradually became irregularly intermittent. The attack of pain in the stomach came on at the accession of the feverish aggravations. By the fourth week, two to three days would elapse between the returns of the pain and feverishness. The intervals tended to grow longer as time went on. This state of matters continued for six weeks, during which time the patient was entirely confined to bed, having no inclination to rise, partly from his extreme sensitiveness to cold, and partly from his feelings of great debility. From first to last, the bowels were constipated, and laxative medicine was regularly administered every second day. The evacuations were quite natural. The urine was sometimes a little diminished, but generally abundant and clear. There was at no time any eruption on the skin over the abdomen, and no pain *on pressure* in the iliac regions, or anywhere, except over the epigastrium, and then only *when the pain was present.* There was no flatulent distension. The treatment consisted of hot poultices when the pain in the stomach was present, which always gave some relief. Preparations of quinine, cinchona, and the mineral acids were administered.

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* *Medical Notes and Reflections*, by Sir Henry Holland. Third edition. Page 346.

The diet was chiefly milk and farinaceous food, of which the patient took a large quantity. When the pain in the stomach was present, the patient was not so inclined for food; but still, it did not seem to interfere much with digestion, and, at the end of his confinement to bed, he had not lost much flesh, although his muscular debility and loss of nerve power was remarkable, and quite out of proportion to the duration and severity of the febrile symptoms. After being able to sit up, the patient did not make progress in strength day by day. Some days he felt much stronger than others, without any assignable cause. As soon as he was able—on the 4th of July (*i.e.*, two months from his taking to bed) — he left Helensburgh, and went to Linlithgow. The day of his journey he felt extremely well, and could walk with astonishing activity; but, after a few days, he relapsed, and had to go back to bed for nearly a week, suffering from pain in the stomach, some feverishness, and great debility. Two months more elapsed before he was able to resume his employment, at which he continued for three months.

Then, on the 1st January, 1879, just after a sudden thaw, this unfortunate lad again took to bed, with similar symptoms.

Attacks of pain in the pit of the stomach, with feelings of sickness, and, in particular, great general depression, came on at intervals of six to eight days. The pain was much more severe than formerly. It was very bad for about twelve hours, and, in the course of the next twelve hours, subsided. During the height of the pain he could take no food; but it was alleviated by warm drinks. There was little or no elevation of temperature at these attacks, which might be described as waves of increased nervous depression, accompanied by neuralgia in the stomach. There *may* have been some affection of the mucous membrane of the stomach, similar to what was *seen* in cases 5, 6, and 7. In the six or eight days of interval between the attacks, the patient continued very low and depressed, both in body and mind (although he had nothing to distress his mind). At the end of seven weeks, this patient was able to leave home for change of air, by which he was much benefitted. For some months, he was liable to slight returns of his feelings from over-fatigue, and from changes of weather; but he is now quite recovered.

CASE XII.—A lady of about 40, who lived in the same house as the preceding, had a similar illness, which began in January, 1878. She lay in bed for about six weeks. She also had pain in the region of the stomach; but there was this peculiar feature, that the upper half of the abdomen was hard, like a board, rendering it highly probable that the pain had not its seat in the stomach itself, but was chiefly due to the spasmodic contraction of the abdominal muscles. In this case, as in the preceding, there were low, remitting febrile symptoms, and a peculiar depression of the whole system, which was obviously the essence of the malady. This lady took her food very regularly, and in fair quantity; and, except constipation, there was no disorder of the digestive organs. She slowly got well, and kept well for eight months, when she was again similarly attacked

On this occasion, the muscular spasm was situated in the right iliac region and lower part of right lateral region. This tonic spasm was continuous, although varying in intensity and consequent painfulness, for four or five weeks, during which time she was confined to bed, and, thereafter, it occurred intermittently for some weeks more.

Numerous similar cases could be given. In the large majority, severe neuralgia and muscular spasm, prominent features in cases Nos. 11 and 12, did not occur at the height of the illness. These, and other neuroses, happened more frequently in the advanced stage, or as sequelæ.

It may here be remarked, that the group of cases under consideration, as well as those described under C, 1st. as accompanied by decided gastric catarrh, would not, according to some authorities, be called cases of gastric influenza, but cases of gastric fever.

The late Dr. Andrew Anderson, in his lectures,* described gastric fever as a separate fever from typhoid; and he would, no doubt, have recorded many of the instances above related as cases of gastric fever. Dr. Anderson's general description of his gastric fever differs from the general description above given in two respects. First, and chiefly, the assimilation and nutrition were much more interfered with; and, secondly, the remittent and intermittent features of the illness were less strongly pronounced. But then, Dr. Anderson refers to less common forms of gastric fever, which seem exactly to correspond to what may be termed the *run* of the cases here prevalent. But, without discussing the question of nomenclature, I think it will be generally admitted that the cases narrated above should not be called typhoid. The distinctive symptoms of typhoid were absent, and the symptoms present exhibited characters so peculiar and definite, that, after the illness had fairly begun, one could predict much regarding its course, behaviour, and upshot. That the duration was uncertain, and often extremely prolonged, is, of itself, a most important distinction from typhoid fever. If diseases are to be classified according to their natural history and course, the cases observed were far removed from typhoid; but, if they are to be classified etiologically, these morbid processes will be found, I believe, to be closely allied.

The connection appears again when the subject is viewed from another standpoint, such as is supplied by the following cases:—

CASE XIII.—A boy, aged 7, showed symptoms of slight pyrexia for a week. The first few days, he complained a little of his throat, which was somewhat red and swelled; but this did not continue. After a week, he was kept entirely in bed. In the mornings he was quite lively; but by mid-day he got languid and dull; and in the afternoon became feverish. The temperature rose and fell. On different afternoons it varied from 100·5° Fah. to 103° Fah. The boy was restricted to milk food and beef tea, but he took his food quite well, and, throughout his whole illness, showed no symptoms of derangement of the stomach or digestive organs beyond slight constipation. This state of matters went on for three to four weeks, after which the symptoms had so far abated that he was allowed to rise; but, for very many weeks after this, attacks of languor and succeeding feverishness occasionally occurred at irregular intervals. The parents of this child, and other members of the household, suffered from the common forms of influenza—some of the family previously, and some about the same time. If it were asked, by what name would you call the illness of this little boy?—I answer that, in my view, it presented the essential characters of the cases above described as cases of influenza, without, or nearly without, any recognisable affection of the mucous membrane. Many practitioners would call this case one of infantile remittent fever, and, certainly, it would be an appropriate name; but, at the same time, I believe the *material cause* was not different from what produced the other illnesses in the household.

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* *Ten Lectures Introductory to the Study of Fever.* By Andrew Anderson, M.D.

Cases in children similar to the above were very numerous, particularly in 1879. In some there were symptoms of gastric irritation, and some failure of appetite and digestion during a portion of the illness. In others, the whole illness was so slight and intermittent, that confinement to bed was not necessary, and it was truly a *walking fever*. It is interesting to note Sir H. Holland's reference to similar cases:—"The infantile remittent fever, in its various forms, has equally prevailed during the period of some of these influenzas" (the epidemics that occurred between 1831 and 1838 inclusive), "and in such close concurrence as to give strong suspicion of a relation more intimate than that of mere coincidence of time."

The following observations carry us still further:—In a family, various members of which were suffering from influenza or infantile remittent fever, one child, aged two years, was simultaneously affected with pyrexia of a more continued type. The child had a high temperature, the tongue was very white, and he would scarcely take any nourishment. By the 8th or 9th day a papular eruption began to appear over the abdomen, which became very abundant in a few days. Towards the end of the second week the child was very ill. The tongue and lips were dry, and almost black—sordes covered the teeth and gums. The abdomen was distended with flatulence, and he had frequent greenish, slimy evacuations. By the middle or end of the third week improvement gradually set in. Nearly the same history applies to a child of about three years in another family, of which all the members, except one servant, were at the same time suffering from the prevalent influenza.

I have no doubt whatever that these two cases were examples of typhoid fever in children. Their illnesses were greatly different, clinically, from the other cases in the respective households where they occurred, yet careful investigation failed to supply any grounds for the opinion that these children had been exposed to any source of infection different from that which had affected the other members of the two families. If we are correct in concluding that no other cause was in operation, we must attribute the different results to differences in constitutional susceptibility, or to the same poison taking effect (by preference in some cases) upon certain tissues, the derangement of which exercises a more persistent and disturbing effect upon the whole organism. Sir H. Holland makes a most important observation bearing on this question. He refers to "the aggravation of distress to the (influenza) patient when the disorder passes suddenly from the condition of catarrh to that of an affection of the intestinal membranes. Though apparently a simple translation of place without alteration of the cause of disorder, yet the symptoms assume a new character," . . . "the disorder frequently reverting again to the catarrhal form, with the cessation of the symptoms which had marked its translation to the membrane of the alimentary canal." (*Ibid.* page 345.) The practical point which I wish to bring into prominence is this, that these complaints, severally described as gastric influenza or gastric fever, infantile remittent fever, and typhoid fever, although very different in many respects, are, nevertheless, most nearly related *in origin.* A part of this proposition is still more strongly put by some authorities, such as Dr. West, who hold that infantile remittent, in its *mild form* as well as in its *severe form*, is *identical* with typhoid in the adult.

(E.)—*Cases of Influenza complicated with Affections of the Internal Organs.*

Case XIV.—Mrs. W. was seized on a Monday with alternate shiverings and heats, with sore throat and coughing. She got better in a few days. On the following Monday she was similarly attacked, and again got gradually better, and was out of doors on the Sunday.

But on the third Monday, another seizure occurred, which was considerably worse. She had severe fits of coughing, and by Tuesday or Wednesday began to complain of pain in her side catching the breath. On Thursday she was said to be highly feverish. On Friday I visited her for the first time.

The temperature was 102° Fah. The mucous membrane of the pharynx was red and swelled. She had had no sleep preceding night from the incessant and severe cough. There was almost no expectoration. She complained of a stitch on the left side, posteriorly. In this region there were the physical signs of pleurisy over a limited area. Liniment. Cantharid. B.P. was painted over the seat of pain, and poultices were applied after the film was dry. The case was considered one of influenza complicated with limited pleurisy. Next day—Saturday, the pleuritic pain was much relieved, although the effusion was increased. *The blister had risen well, and presented the usual appearances.* Urine examined for albumen—none present. On Sunday the symptoms were improving. On Monday Mrs. W. complained greatly of *the pain of the blistered surface*, and on examining it on Tuesday, I found the skin red and angry, and covered with a considerable exudation over the surface, which resembled a thick sprinkling of ground rice, at some places thicker than others.

Mrs. W. also complained much of the roof of the mouth and gums. On examination, it was seen that these parts were spotted over with white, aphthous looking spots which, in some places, had run together. From this time Mrs. W. slowly recovered. The physical signs in the chest, as resolution took place, showed that there was some implication of the lung substance as well as the pleura. This case would not be complete without mentioning that it was one of a group which took origin about the same time on the shores of the Gareloch. The other cases of the group did not come under my observation, but the following facts regarding them have been kindly supplied by Dr. James Finlayson of Glasgow:—One of them (the mother of four young children) ended fatally in Glasgow. In this case a *post-mortem* examination disclosed an extensive pneumonia, chiefly of the upper lobe, with slight pleurisy. The physical signs during life were obscure, and were only discovered, although carefully sought for, four days before death. The death was certified "influenza complicated with pneumonia." The other individuals of the group were the children of the above. They all recovered. In one of them there was pretty distinct evidence of consolidation of the lung.

CASE XV.—Four months previous to the case last narrated, a lady, residing in the same locality, suffered from the ordinary symptoms of influenza, simultaneously with several other members of the household. For a good many days she had the severe paroxysmal cough which is so frequent an accompaniment of the complaint. Then the general symptoms became much aggravated, and after a few days decided, although limited dulness to percussion was discovered over a part of the right chest. There was no pain in the region, no pleuritic friction and no crepitation, but the vocal resonance was increased and continued so as long as dulness to percussion was appreciable. This old lady was in a very critical state for some days, with a pulse reaching 135, but somewhat suddenly amendment began, although complete recovery was slow.

In several of the cases that I have observed the physical signs have been similar to those described, but in a few there have been signs of pleurisy at the outset and during the resolution period. The pulmonary affection seems to be a form of consolidation which takes place without the characteristic signs of pneumonia. In none of them (perhaps with one exception) was there any pneumonic sputa—usually the hacking paroxysmal cough of the influenza abated after the chest complication was established, as if the latter partook of the nature of a metastasis.

Referring to these complications of influenza, Sir Henry Holland says, "the condition is probably nearest akin to that form of pneumonia called typhoid."

Besides thoracic complications in the course of the influenza, jaundice with enlarged liver was several times observed to occur as a complication. The view taken of these cases was either that the ducts of the liver had become affected by the peculiar catarrh, or that the substance of the gland, just as in the case of the lungs, was irritated by the specific virus of influenza.

(*To be Continued.*)

CASE OF SUPPOSED LYMPHADENOMA TREATED WITH IODIDE OF POTASSIUM.

By HUGH CUNNINGHAM, M.D., Dumfries.

A. W., æt. 35, consulted me on the 29th January, 1880, about an enormous tumour which he had on the right side, extending from the middle of the neck to several inches below the nipple, the cervical and axillary glands upon the left side being also hypertrophied.

He had generally enjoyed good health, but had tried his constitution much by indulging freely in intoxicating liquors. About six years ago, too, he thinks he contracted syphilis; and again, three years later; but on this occasion at least, it is doubtful if the system was infected, seeing that he had suppurating buboes in the inguinal regions, and no ascertainable constitutional symptoms.

More than two years ago he first noticed a swelling (no doubt of the posterior auricular glands) behind the right ear, which extended gradually down the right side of the neck, and implicated the thoracic and axillary glands. On the left side the glands in the neck and axilla were likewise much enlarged, but not to anything like the same extent as on the right. The inguinal glands on the right side were likewise considerably enlarged, but not those on the left. The enlargement on the right side measured 14 inches from its commencement in the posterior triangular space to its termination below the nipple, and, transversely, 10 inches from the axilla forwards to near the middle line. Its surface was irregular and more or less nodulated, and covered both plexuses of veins; at its most prominent parts the skin was distinctly reddened. He was under the impression that the swelling on the right side was brought on by carrying about 200 boxes of oranges daily on his right shoulder, for a few days each month. He was a healthy looking, well nourished man, and, were it not for the presence of the swellings, would have considered himself in perfect health.

Looking upon this case as one of lymphadenoma, or Hodgkin's disease, and being well aware of the very serious nature of such a complaint, I requested him to go to Glasgow and see Professor M'Call Anderson, in the hope that he might be able to suggest something for his relief. Dr. M'Call Anderson wrote me as follows:—"This case is so peculiar, that I asked Dr. Eben. Watson to see it along with me, especially as there is a surgical element in it. We are both at one with regard to it. We *hope* that it may be syphilitic, and, therefore, recommend that he should abstain from all manual labour, and take iodide of potassium (gr. x, gradually increased to gr. xxx), three times a day. Should this fail to be beneficial, we fear the case must be looked upon as one of lymphadenoma, and in that case, it is likely, sooner or later, to spread and to undermine the health, perhaps, also, to cause enlargement of the liver and spleen. Should it suppurate at any part (of which there is no sign at present), the abscess must be treated on ordinary principles."

Such, briefly, is an outline of this case, which was treated in accordance with Dr. Anderson's recommendations, and with results which much astonished me; for, on the 3rd March, a little more than a month after he began to take the iodide, he wrote saying "that the lumps were greatly reduced, and his breast was nearly level again."

On the 14th April he presented himself for inspection at my request. I then found that the enlarged posterior auricular glands on the right side had disappeared. The large tumour was not a quarter of its former size, and the skin covering it had resumed its natural appearance. The glands of which it was composed were now quite separate and distinct—very hard and painless. The enlarged inguinal glands had disappeared, while the cervical glands on the left side of the neck were not larger than field beans, and those in the axilla scarcely the bulk of an almond.

No doubt the favourable change in this patient's condition points to syphilis as the cause of his symptoms, but the time is altogether too short to enable us to say positively that the disease has been completely arrested, although there is good reason to hope that, by perseverance, a complete cure may result.

Hitherto, termination in recovery in cases such as this has been the exception and not the rule. Wunderlich has reported a case in which the disease disappeared under the use of the iodide of potassium, and more recently, Billroth records having obtained good results with Fowler's solution. Two cases are also reported by Czerny as having been cured by arsenic, but many have also been published in which the results of such treatment have been altogether negative.

PERICARDITIS AND GENERALISED TUBERCULAR DISEASE, FOLLOWING SCARLET FEVER.

By THOMAS B. ADAM, M.B.,

Late Resident Assistant at the Western Infirmary of Glasgow.

David L., æt. 18, farm labourer, Orkney, was admitted to the Western Infirmary, Glasgow, on 12th December, 1879, under the care of Dr. Finlayson. The case seems worthy of record on account of the unusual sequelæ of scarlatina here observed. The diagnosis, also, was beset with difficulties; and, although the view taken during life was not correct, the approximation to the truth was near enough to afford profitable material for study and consideration.

On admission, this patient's appearance was highly suggestive of chronic renal disease. Anæmic, and evidently considerably emaciated, his face was puffy and swollen, and there was slight general anasarca, but no ascites. As, on inquiry, his present illness was found to have dated from an attack of scarlet fever, eight months before admission, following which, by a few weeks, the anasarca had appeared, the idea of chronic Bright's disease, as a sequela of scarlatina, seemed, at first, the natural one. The urine, however, while high coloured and scanty, slightly alkaline, and with a sediment of earthy phosphates, and stellar crystals of phosphate of lime, was found to contain no trace of albumen or tube casts.

Examination of the chest showed relative dulness over the whole of the left front; but, behind, the percussion note over left lung was distinctly more resonant than over the right. The respiratory murmur was nearly normal over both lungs, but slighty fuller on right side in front. The left clavicle projected somewhat forwards, and patient at times complained of a feeling of soreness towards its sternal end.

Cardiac dulness could not be accurately defined from the generalised dulness of the left front. The heart's sounds were feeble and rapid, but without murmur; and they were regular in rhythm. Pulse feeble, averaging over 100 beats per minute.

The hepatic dulness was distinctly increased. Commencing at fifth rib, it extended into right hypochondre for over two inches below the margin of the ribs. On deep palpation, the smooth, firm, resistant surface of the liver could be felt, as also its lower edge. Slight tenderness was complained of at times in the hepatic region.

The splenic dulness was also increased, and the rounded edge of the spleen could be distinctly felt in the left hypochondre, extending for about one inch beneath the margin of the ribs.

Appetite fairly good; no vomiting; bowels regular. Patient's chief complaint was of a severe hacking cough occurring in paroxysms, during which the face became much flushed, and epistaxis frequently occurred. Expectoration was slight, consisting of frothy mucus. Temperatures—average 99·4° in morning, and 100·4° in evening.

The following facts have been ascertained regarding the history of patient's illness, Dr. Logie, of Kirkwall, having kindly supplied some details of the case:—Up to eight months before admission he had been a strong healthy lad, never a day off work through sickness. At this time he was laid down with scarlet fever, which was then prevalent in the neighbourhood. The attack with him seems to have been mild, confining him to bed for but one day. On the fourth day of his illness, with his throat slightly sore, voice reduced to a whisper, and the rash still out over his body, he resumed work, taking in turnips and carting seaweed. The weather at the time was bitterly cold, snow lying on the ground and keen frost prevailing. The rash remained out for four or five days, and, on its fading, desquamation of the cuticle began, and continued over some weeks. Ten days after starting work he was forced to stop from the sudden onset of severe pain in left side, with great distress in breathing. He had also a slight cough which pained him much. A doctor from Kirkwall was called, there being none in his own island, and diagnosed acute pleurisy of left side, and treated him by means of fly blisters, &c. Three weeks after the onset of severe pain in side, general anasarca occurred; the arms alone remaining free from dropsy. Throughout the whole of this acute illness, patient was able to lie only on the left side. The acute symptoms gradually subsided, but cough and great general weakness remained. The anasarca came and went, and, in the course of a month or two, no improvement occurring, patient was admitted into Kirkwall Hospital, on 27th July, 1879, three and a half months after the occurrence of the scarlet fever.

According to the report received, the patient was found on admission to be suffering from "enlargement of liver, ascites, anasarca, and hydrothorax of left side." No albuminuria was observed at any time. "No hæmorrhage from the lungs, but frequent fits of hard ringing spasmodic cough, and very often epistaxis." The ascites seems to have been very obstinate, but ultimately disappeared under a course of elaterium. The effusion on left side was treated by means of a succession of blisters. He remained in hospital for about three and a half months, the anasarca coming and going during his residence, and about a month before he left, enlargement of the spleen was noted. A month after leaving the Kirkwall Hospital, feeling himself getting gradually worse, patient came south to some friends in Glasgow, and was admitted to the Western Infirmary.

The family history is very good. Out of 11 children all enjoy excellent health, save patient.

Comparing the physical facts ascertained with the previous history of illness above noted, the dulness found in the left front was supposed at first to depend largely on thickened pleura or other products, the result of the acute pleuritic attack: but from the nature of the cough, as also the absence of any great abnormality in the respiratory murmur, a suspicion of mediastinal tumour, interfering with the recurrent laryngeal nerve, was also entertained, and to the presence of such, part of the dulness, which was so prominent in front, was thought to be due.

Founding upon the enlargement of liver and spleen, and the probability of mediastinal tumour, and taking the marked anæmia, and the tendency to slight anasarca into account, a diagnosis of lymphadenoma was inclined to. The blood was examined, but no undue preponderance of white corpuscles found.

Further notes of the case during residence in ward are as follows:—

14th January, 1880.—Since admission severe paroxysmal cough, with daily recurring epistaxis, has been the most prominent symptom. No dropsy to any extent has been noticed. Patient is up every day in the ward, and takes his food fairly well. Temperatures continue subfebrile. Urine continues to contain phosphates, but no albumen. About a week ago distinct pleuritic friction was heard in the right infra-axillary region, and shortly afterwards patient complained of a pretty severe stitch on that side. No signs of effusion have been made out. For the past three or four days headache has been complained of, and last night this became very severe, the pain being referred chiefly to right frontal and temporal regions. Pain is also complained of in back of neck. On examination of cervical region a chain of enlarged glands was found for the first time on either side of neck. Blood examined again today shows no increase of white corpuscles.

19th January.—Headache much worse. The pain is paroxysmal, and spoken of by patient as if a knife were cutting into his brain on right side. Vomiting has been persistent during the past four days, everything taken into the stomach being immediately rejected. Patient is nourished by enemata. A marked lowering of the temperature has occurred over the past three days, average morning temperature now being 98°, and in evening 98·6°.

22nd January.—A well marked convulsive fit occurred this morning. Immediately preceding it patient had complained of loss of vision. For about two minutes the muscles of the face and arms were violently convulsed, patient thereafter relapsing into a heavy stupor, from which, however, he soon rallied. Headache is less complained of, and patient has a great tendency to sleep. Temperatures continue low.

24th January.—Yesterday, two more convulsive seizures occurred at an interval of several hours. They were similar to, but rather more severe than that of the former day; and, whilst after the first, patient regained consciousness, after the second he lapsed into a semi-comatose condition from which he never rallied, but died early this morning, without any further symptom manifesting itself.

After the occurrence and rapid development of head symptoms, and the appearance of glandular swellings in the neck, while still inclining to the former diagnosis of new formations of lymphatic tissue, the opinion was now entertained that these were probably of a malignant nature, and that the head symptoms were dependent on the development of such another growth in the brain. The following report of the *post-mortem* examination is given by Dr. Coats:—

Summary of Post-mortem Appearances.—Acute (*tubercular*) *pericarditis. Strumous disease of left sterno-clavicular articulation. Enlargement of bronchial glands. Condensation in lungs. Enlarged* (*tubercular*) *gland at porta of liver. Tubercular nodules in liver. Caseous tubercles in brain. Localised meningitis of convexity of brain.*

External Appearances.—Nothing remarkable.

Chest.—On opening the pericardium its visceral layer is found coated with a very thick and shaggy layer of yellow fibrinous material. The parietal layer is greatly thickened, and there is some fibrine on its surface. Over the anterior surface and apex there is no adhesion of the pericardium, but behind, and at the base, there is adhesion, mainly by the coalescence of the fibrine, but to some extent also by vascular adhesions. In the substance of the pericardium there are visible, on section, yellow nodules.

The bronchial glands are much enlarged and cheesy, but there is no such general enlargement as to suggest a distinct adenoid tumour. Around the enlarged glands there is a good deal of matting and adhesion. The left sterno-clavicular joint is greatly enlarged, the enlargement being due chiefly to a great thickening and softening of the ligaments and synovial membrane. In the joint the cartilages are destroyed, and the bare and carious head of the clavicle and upper part of sternum are exposed.

The lungs are firmly adherent almost throughout, but at the right base there is about a pint of serous fluid. Scattered throughout the lung tissue there are nodules of condensation.

Abdomen.—The liver is moderate in size; its tissue is dotted throughout with frequent yellow nodules, generally about the size of millet seeds, but many of them smaller. Between the nodules the liver tissue appears normal. Just at the porta of the liver, there is a large lymphatic gland, like a chestnut in size. Its tissue is soft, and there is no cheesy degeneration visible in it. Under the microscope it contains tubercles with giant cells in large numbers.

The kidneys and spleen present nothing remarkable, the spleen being rather large.

Brain.—On removing the dura mater there is observed, on the right lateral aspect of the hemispheres, an area in which a yellow exudation is present under the arachnoid. This follows the vessels, forming yellow streaks in the sulci. In addition, there are one or two patches of hæmorrhage. The area occupied may be about 2 inches square, and is about the middle and posterior parts of the middle lobe. On section there is no tubercular tumour visible here, but slightly in front of it, in the frontal lobe, there is a scrofulous tubercle having the usual characters, and about the size of a hazel nut. Several others of various sizes are found in the brain substance.

CITY OF GLASGOW FEVER HOSPITAL, BELVIDERE.

CASE OF ENTERIC FEVER TREATED WITH QUININE.

UNDER THE CARE OF JAMES W. ALLAN, M.B.,
SUPERINTENDENT AND PHYSICIAN.

THOMSON M——, æt. 19, was admitted 1st October, 1877.

The following is transcribed from the Ward Journal:—

2nd October.—Numerous rose spots. No motion since coming in. Temperature—last night, 104°; this morning, 103·2°. Milk diet. Shave head.

5th October.—Had a restless night. Had two loose motions, rather dark. Temperature—last night, 103·4°; this morning, 102·4°. Many enteric spots. Abdominal tenderness. Pulse 106. This is a severe case.

Treatment.—Getting milk, and lime water in it, beef tea, and wine ℥vi, and acid mixture. In addition, poultice belly.

6th October.—Slept well. One loose motion. Drinking well. Temperature—last night, 101·4°; this morning, 100·8°.

11th October.—Slept well. No motion. Drinking well. No cough.

12th October.—Slept very well. Temperature—last night, 103·6°; this morning, 100·4°.

13th October.—Slept well. Costive yellow motion. Temperature—last night, 104°; this morning, 101·6°. This lad's temperature to-night is 103°; last night it was 104°. Try quinine as an antipyretic in this case.

℞ Quinine Sulph. grs. xx, Divide in Pulv. ii.
Sig. One at midnight, and one at noon to-morrow.

14th October.—The following is Nurse Hargan's note:—"At midnight temperature, taken before the powder was given, was found to be 102·8°. Taken again three hours after the powder was administered, was found to be 101·4°. Taken again at 5 A.M., was 102·4°."

Got second powder at 12 noon; before it temperature was 102·6°, and three hours after it was 103·6°; this evening, at 7 o'clock, it was 103°. Pupils somewhat dilated. Had a costive motion during the night. To have ℥vi whisky to-day. He has been getting ℥vi wine.

15th October.—The quinine not having given satisfaction was abandoned for the time.

16th October.—It had been resolved, before giving quinine a further trial, to determine patient's temperature for a night, without the use of the drug.

At 11 o'clock last night his temperature was,	103·2°
" 12 midnight it was,	103·4°
" 1 A.M. it was,	103·2°
" 2 "	102·6°
" 3 "	103·4°
" 4 "	103°
" 5 "	102·8°
" 6 "	101·8°
" 7 "	101·8°
Temperature about 9 o'clock this morning,	102·4°

During all this time patient got nothing, except his whisky and milk. He is on ℥iv whisky. Had two motions during the night. To have quinine as follows:—

Quinine Sulph. grs. xx.
Divide in Pulv. ii.
Sig. One at 2 P.M., the other at 9 P.M.

17th October.—He got a powder at 2 o'clock yesterday. Temperature at 5 P.M. was 103·2°. Evening temperature was 104°.

Got the other powder at 9 P.M. last night. His temperature at midnight was 103·2°; at 3 A.M., 102°; at 6 A.M., 99·4°; at 9 A.M., 98·6°.

The following will show at a glance the comparison of the temperatures without and with the quinine:—

	Last Night. (*With Quinine.*)		Previous Night. (*With no Quinine.*)
Midnight.	103·2°		103·4°
3 A.M.	102°		103·4°
6 A.M.	99·4°		101·8°
9 A.M.	98·6°	(about 9 A.M.)	102·4°

The contrast here is very striking. The influence of the quinine cannot be ignored. I wish no more quinine to be given until further orders, but the temperatures to be taken as before. It is very desirable to ascertain how long the influence of the quinine on the temperature will persist.

Getting whisky, milk, and beef tea. To have nothing else.

18th October.—Had a very good night—slept well. No motion. Got whisky and milk. No medicine of any kind.

Temperature at midnight last night, ...	101·6°
" " 3 A.M., ...	101°
" " 6 "	101·6°
" " 9 "	102·4°

Is the marked depression of temperature at midnight last night to be attributed to the quinine formerly given?

Still, no quinine to be given, but temperature to be taken as before.

19th October.—Very good night—slept well. Formed motion this morning.

At midnight last night, ...	103·2°
" 3 A.M., ...	102·2°
" 6 "	100°
" 9 "	98·8°

Got nothing but whisky and milk.

20th October.—Good night—slept. Had a formed motion.

Temperature at midnight last night, ...	102°
" " 3 A.M., ...	100°
" " 6 "	98·2°
" (about) 9 "	98·8°

Had nothing but whisky and milk.

21st October.—Slept pretty well. Had formed motion.

Temperature at 12 midnight last night, ...	98·6°
" 3 A.M., ...	100·4°
" 6 A.M., ...	100·2°
" between 9 and 10 A.M., ...	98·6°

During the night got nothing but whisky and milk. He gets beef tea during the day. Yesterday he got some arrowroot as well.

23rd October.—Did not sleep so well last night. Cough was pretty troublesome. Had costive motion. Temperature—last night, 98·6°; this morning, 99·2°. If cough is troublesome poultice chest and give small doses of the cough mixture. He is getting milk and beef tea, and arrowroot and whisky.

24th October.—Had a very good night; slept well. Cough was much better. No motion. Temperature—last night, 98·4°; this morning, 97·4°.

25th October.—Had a good night; slept well. Had natural motion yesterday. Temperature—last night, 97·6°; this morning, 98·2°.

2nd November.—Patient has been behaving like a spoiled self-willed child, or rather like an imbecile.

12th November.—Patient showed such determination to play the fool that he got a bath.

13th November.—Patient spent the night in an outrageous fashion.

9th December.—Patient seems to fancy that he is dying. He is like a child; seems to have no control over his emotions. Patient is up and going about; he has been up for a week at this time *To be carefully watched.*

Dismissed well, 26th December, 1877.

CURRENT TOPICS.

The International Ophthalmic Congress is to be held in Milan, on the 1st to the 4th September, 1880. The International Otologic Congress is to follow at the same place, on the 6th to the 9th September. This is the second Otologic Congress, the first having been held in New York in 1876.

We learn that Mrs. Strange Butson has in preparation a work, to be issued by Messrs. Griffith & Farran, named *The Art of Washing*. It is divided into three sections, of Personal, Clothes, and House Washing; and the author has aimed at making it practical and useful throughout. The book will be dedicated to the whole medical profession, by the eminent physician, Sir George Burrows (by kind permission), and may be used by medical men as a hand-book to give their patients, for a simple guide in one of the most important rules of hygiene.

Glasgow Hospital and Dispensary for the Diseases of the Ear.—A meeting was held on 13th May, in the Religious Institution Rooms, Glasgow, for the purpose of founding an Hospital and Dispensary for Ear Diseases, for Glasgow and the West of Scotland. Dr. Andrew Buchanan, President of the Faculty of Physicians and Surgeons, was called to preside. A constitution was adopted, and office-bearers elected; also an Honorary Medical Staff. The office-bearers are as follows, viz.:—*Honorary President*, Dr. Andrew Buchanan, President of the Faculty of Physicians and Surgeons. *Honorary Treasurer*, Robert Gourlay, Esq., Bank of Scotland. *Directors*. William Auld, Esq., C.A., Park Terrace; Thomas Brown, Esq., Brisbane House, Ibrox; Alexander Crum, Esq., of Thornliebank; Rev. Dr. J. Elder Cumming, Granby Terrace; Peter Denny, Esq., Dumbarton; Bailie John Finlay, Moss Park, Pollokshields; Leonard Gow, Esq., Hayston, Kirkintilloch; Charles M. King, Esq., Antermony House, Milton of Campsie; Joseph R. Martin, Esq., Jessieville, Helensburgh; Stephen Mason, Esq., Belhaven Terrace; A. Dunn Pattison, Esq., of Dalmuir; James Wilson, Esq., Provost of Govan; John Mann, C.A., 154 St. Vincent Street, Secretary and Acting Treasurer.

The following are the Honorary Medical Staff:—Dr. Peter Stewart, 1 Albany Place, *Senior Consulting Physician*. Dr. James Morton, Athole Place, *Senior Consulting Surgeon*. Dr. J. Cowan Woodburn, 197 Bath Street, *Consulting Dental Surgeon*. Dr. David Foulis, 191 Hill Street, Garnethill, *Consulting Surgeon for Throat Diseases*. Dr. A. K. Irvine, 3 Newton Terrace; Dr. A. L. Kelly, 24 Carlton Place; and Dr. John Gardner, 1 Lendel Terrace, Paisley Road; with Dr. James Patterson Cassells, 2 Newton Terrace, *Aural Surgeon*.—*Communicated.*

REVIEWS.

Clinical Lectures and Essays. By Sir James Paget, Bart., F.R.S., D.C.L. Oxon; LL.D., Cantab. Edited by Howard Marsh, F.R.C.S. Second Edition. London: Longmans, Green & Co. 1879.

Addressed to those who have not great opportunities of acquiring surgical experience, this book will, nevertheless, be valuable to all who interest themselves in surgery, for it is the deliberate re-statement of matured views by one who is a master alike of his art and of the language in which he writes. The power of graphic description possessed by our author would, indeed, be a tempting source of fallacy in itself, were it not for the conscientious care taken in every detail to state the opinions put forward in the most cautious way, "talking," as he says himself, "more of belief than of knowledge."

In a series of eighteen essays, which range over the period from 1864 onwards, the subjects treated of are, of course, very varied, and to some extent detached from each other; a peculiarity which renders the reviewer's task more difficult, while it adds to the pleasure of the reader, who is never wearied by a too prolonged elaboration of one aspect of any question. The views advanced are carefully defined and succinctly dwelt on; and a set of condensed notes, by Mr. Marsh, especially referring to the bearing of the lectures on the diseases of children, add to the interest and value of the work.

The first essay is devoted to the consideration of the general conditions—such as age, habit, or constitution—which may unsuit patients for operation; and much valuable experience is here given, in a moderate compass, applicable to large fields of surgery. Mr. Lister, it is true, has shown us how to be more independent than we were of the constitutional peculiarities of our patients, but these must remain in all cases—and particularly in the very numerous ones where antiseptics are inapplicable—a source of grave anxiety. Incidentally, at the end of this chapter, Sir James states that in tracheotomy for diphtheria he has never seen the wound take on a diphtheritic action; to which Mr. Marsh adds, in a note, that, out of 120 cases of a similar sort collated by him, the wound had always remained free from diphtheritic implication, though he quotes Trousseau and Spence to a contrary effect.

The chapter on the Calamities of Surgery is one which will be read with the deepest interest by all who have any experience of the uncertainty which dogs every step of the unwary surgeon, as a frank avowal of unexpected error, and an eloquent warning against levity or carelessness in proposing even the smallest operation. In a short paragraph, he dwells on the good effect of antiseptics on the death-rate after operations, and on the rivalry fostered by the public discussion of this question: the effect of all which he concludes to be a reduction of the death-rate by two-thirds, in the period within his own recollection.

Sir James Paget's views on Carbuncle are too well known to need repetition here; but we fear that, even in these days, not a few surgeons still cling to the old fallacy that free incision is the best treatment for this painful condition. If anything could overturn this erroneous belief, it would be the results of dispensary practice, where among poor and even impoverished patients, the expectant treatment, with fresh air, and certainly with very moderate diet, is followed by the happiest results. Our author places the mortality under the expectant plan at 2 per cent, a figure which, he truly remarks, is remarkably low for such a disease. A very interesting chapter is that on dissection wounds, for in it Sir James plays the part of a patient with ten doctors attending him. He brings out with singular clearness the fact that a man may become acclimatised to septic poisoning; and that, after desisting for a time, say, from regular *post-mortem* work, he may lose this protection, so that after a holiday a fever physician or a pathologist may be in greater danger than before it.

Space will not permit of a minute analysis of the whole of this charming work. If such a phrase might be used, one could term it a series of finishing lessons in surgery, not designed to complete our knowledge of the subject, but rather to tell the learner who has already gone over the ordinary curriculum how to observe—to raise him above the level of the class books, and to open his eyes to the infinite variety of type in disease which he must study and treat.—D. F.

Skin Diseases: A Manual for Students and Practitioners. By Malcolm Morris. London: Smith, Elder, & Co. 1879.

The author of "this little work" makes the prefatory statement that in undertaking it his "object has been to supplement, not to supplant, existing treatises;" but it is difficult to see how a compilation of this kind, bearing on every page, as it does, so many marks of painful condensation, and which, moreover, contains nothing new and little that is characteristic of its writer, can be considered in any sense supplementary to larger and fuller works, which embody everything here mentioned and much more.

The opening chapter is devoted to the anatomy and physiology of the skin and its appendages, the second to the general pathology of skin affections; these chapters, following the general plan of the book, are unduly short, but are accurate as far as they go. In the section on anatomy are found seven excellent woodcuts, the "illustrations" referred to on the title page.

In regard to classification, Mr. Morris exercises the privilege claimed by nearly every author who writes on skin diseases, in adopting a method of arrangement to some extent original. Recognising the impossibility at present of classifying throughout according to cause, he frames his scheme on eclectic principles rather than on any homogeneous scientific plan. He follows Erasmus Wilson in arranging cutaneous affections in two *anatomical* divisions—diseases of the skin proper and diseases of its appendages; the first of these is subdivided, as in Hebra's classification, into *pathological* classes, the second on an anatomical basis. The result is a system which may work well clinically, and which possibly has its advantages as an arrangement to lecture from, but it is scarcely scientific, while it presents certain features which are distinctly objectionable. Thus there is no proper place found in it for parasitic diseases, which are here, in company with eruptions produced by drugs, placed ignominiously at the end of the second division, as diseases of the appendages of the skin—which some of them, scabies or phtheiriasis, for instance, certainly are not. Indeed, unless the printer be at fault, there seems to be an absurd error here, as parasitic affections and medicinal rashes are found under subdivision D, diseases of nails. If it was the author's intention to separate these affections from Division II, they should have been erected into a third division, though this would involve the inconsistency of making the first step in classification depend on at least two distinct principles. It is explained that many hints have been taken from Dr. Bulkley's system of classification; we believe that the author would have done a much better thing if he had adopted that system as it stands. We notice that zoster is very properly associated with the neuroses, and that its misleading prefix herpes is omitted. Cheiro-pompholyx is also regarded as a neurose, though the reason for this is not very obvious. Alopecia areata is not among the neuroses, nor is it placed among the parasitic diseases; in fact, it would be impossible to infer the author's views as to the nature of this obscure affection from its position in his system of classification.

In a publication professedly of the "handy volume" character, it is startling to find so much valuable space (36 pp.) allotted to the acute infectious diseases (scarlatina, measles, &c.). The only essentially cutaneous element present in these diseases is the rash; a detailed account of the diagnostic features of the eruption in each of the fevers, therefore, is all that should be looked for in a "skin manual." The space in that way gained might, with signal advantage, have been occupied by a fuller consideration of the means by which diseases of the skin are to be combatted. The prominent respect, indeed, in which this work is deficient is the imperfect and often vague manner in which treatment is discussed. This we believe to be fatal to the book's pretensions to be ranked as a work of reference for practitioners, who, as a rule, do not consult the works of skin specialists except when in some therapeutic difficulty.

The chapter on syphilis is much the best in the volume; in this, as in many of the other sections, the influence of the author's teacher, Mr. Hutchinson, is plainly visible.

It would have been much more graceful, not to say fair, if in discussing cheiro-pompholyx the writer had made some mention of the late Tilbury Fox, and his labours in connection with the description of this disease.

There are also some matters in respect to which the author is behind the times. Thus, he has no reference to the presence (by many now considered diagnostic) of the smooth, glistening membrane which underlies the loose epidermic scales in psoriasis. Hirsuties he would treat, if the hairs are scanty and long, by epilation. We are afraid he would not find this very successful practice; epilation, so far from checking hair growth, actively stimulates the papilla, and makes it certain that the hair which replaces that extracted shall be stronger and longer than its predecessor. Better results than can be obtained by epilation or by depilatory pastes, are secured by Bulkley's operation with a plain three-sided needle, or by Hardaway's operation with the electrolytic needle. Medicinal rashes are put away, so to speak, in a corner of this work, and do not receive anything like the notice they deserve; while reference to the eruptions sometimes excited by strychnia, chloral, and digitalis, is entirely omitted. These rashes are often very puzzling, and have frequently been mistaken for measles, scarlet fever, erysipelas, and other affections; they are worthy, therefore, of more extended notice than that here accorded them, and of having their diagnostic points somewhat more fully discussed.

Notwithstanding the few blemishes which we have ventured to point out, Mr. Morris's work is one which will certainly take a high place as a text book for students, to whom any of its shortcomings can be made good by the lecturer; we regret being unable to recommend it so heartily to the attention of practitioners. The author is a careful and accurate writer, and evidently possesses the faculty of grasping and presenting clearly and concisely the salient features of disease.

The book has been finished with great care, and its appearance, both without and within, is all that can be desired.

Lectures on Bright's Disease of the Kidneys, delivered at the School of Medicine of Paris. By J. M. CHARCOT. Translated by HENRY B. MILLARD, M.D., New York. London: Baillière, Tyndall & Cox. 1879.

ANY work by Professor Charcot, bearing on a subject within the domain of Pathological Anatomy, is sure to be worthy of consideration, especially as his views may be regarded as representative of the most advanced French school. At the outset, it may be stated that the views concerning Bright's Disease enunciated here are avowedly those which are prevalent in England, and familiar to English readers, in the works especially of Dickinson, George Johnson, Grainger Stewart, and others.

After a discussion of the normal anatomy and physiology of the kidney, and a brief description of the infarctions and casts met with in the urinary tubules, he considers Bright's Disease under three forms—namely, interstitial nephritis, parenchymatous nephritis, and amyloid kidney, giving descriptions of these various forms with which most readers are familiar. He adds a short paragraph on scarlatinous nephritis.

There is one subject considered in these lectures to which we shall more particularly refer, as it seems to us that the author's views stand in need of some modification. This subject is, the exact locality of the secretion of the various urinary constituents, with special reference to the secretion in cirrhosis of the kidney. We believe that the study of this disease is calculated to throw important light on the question referred to. In the part of the work devoted to the normal secretion of urine the author refers to the views of Professor Ludwig, which are briefly these:—he believes that the entire urinary constituents existing preformed in the blood, pass into the uriniferous tubules at the Malpighian capsules. In the urine which thus transudes there is a great excess of water, and in its passage through the various sections of the tubules water is absorbed and the urine concentrated. Ludwig supports his view by a consideration of the arrangement of the blood-vessels and otherwise; but to this we shall not further advert. The view opposed to this is, that only the water transudes at the Malpighian tufts, while the urea and uric acid are separated from the blood by the epithelium, and added to the water afterwards. This view has received apparent corroboration by an important series of experiments by Heidenhain. He found that sulphate of indigo transfused into the blood of an animal passes into the urine, and does so not through the Malpighian tufts, but through the secreting epithelium cells. This result was obtained by means of experiments, in which the secretion of the watery portion of urine was prevented, the indigo, nevertheless, being still secreted, so to say, by the epithelium cells. It is to be noted that this secretion takes place in special parts of the apparatus—namely, in the tubules supplied with large cloudy epithelium, that is to say, in the convoluted tubules, and the ascending branches of Henle's loops. Heidenhain has also shown by experiments, in which the secretion of water has been interrupted and urate of soda injected into the blood-vessels, that this substance is secreted in the same way as indigo—namely, by the epithelium. It is inferred that the same applies to urea; but as this substance is highly soluble in water, and cannot be procured in the solid form in the tubules, no confirmation has been obtained as to it.

If we turn now to the condition of matters in cirrhosis of the kidney, we believe that light will be thrown on this question of the secretion of urea. It is well known that in this disease, the urine is frequently in great excess and watery, while, as Charcot points out here, the urea is usually in normal amount in the twenty-four hours. Now, in cirrhosis, there is, as is well known, and as Charcot frequently asserts, a great destruction of the uriniferous tubules, especially the convoluted ones, which, even when a few of them persist, are devoid of the proper cloudy secreting epithelium, whose place is taken by dwarfed embryonic epithelium cells. In fact, in an advanced cirrhosis there is very little of the proper secreting epithelium left, and yet, as has been pointed out above, the amount of urea secreted is on the average normal. It is to be remarked in this connection that Garrod has pointed out that, in gouty cirrhosis, while the urea remains normal the uric acid greatly diminishes.

The bearing of these facts appears to us to be obvious, and it seems strange that it has not occurred to Professor Charcot. The facts seem to us strongly confirmatory, so far, of the view of Ludwig, in that they indicate that urea, as well as water, passes from the blood at the Malpighian tufts. The increase in the amount of water in the urine is accounted for in two ways: there is great obstruction of the capillaries, causing an increased pressure in the vessels of the Malpighian tufts, and a consequently increased transudation, while, at the same time, the absence of the epithelium prevents the concentration of the urine. Charcot accounts for the increased watery secretion by the increased arterial tension which he seems to ascribe to hypertrophy of the left ventricle. But, it is known, on the one hand, that the left ventricle is not hypertrophied in every case, and on the other, that the thickening of the internal coat of the renal arteries known to exist in cirrhosis will, by friction, more than counterbalance any increased force of the heart. In fact, the condition of the kidney in advanced cirrhosis is pretty much as if nothing remained but Malpighian tufts and collecting tubes, all the intervening secreting tubes having their epithelium so altered as to be in the condition of collecting tubes. If this be the case, then the urine which passes into the bladder will be very much like the urine which comes from the Malpighian tufts.

Taking this view of it, it is clear that a great additional secretion must take place in the persisting Malpighian tufts, there being in advanced cases a very great destruction of tufts. As the amount of urea secreted is normal, the remaining tufts must bear the additional stress of the secretion. We have already referred to the fact that this additional stress is equivalent to an increase of pressure in the blood-vessels of the tufts, it being a well known fact that the amount of urine secreted depends on the amount of blood pressure here. As above indicated, we believe that the increase of pressure is of local origin, being due to the obstruction of the capillaries of the kidney, which are mainly, if not entirely, formed from the efferent vessel, and whose obstruction would have a direct effect in the way of increasing the tension within the tufts. This view is confirmed by injections of the kidney from the renal artery in cirrhosis, when it is found that on the one hand the capillaries are, for the most part, uninjected, and on the other, the injection material has to a considerable extent escaped from the Malpighian tufts into the tubules, thus indicating a great excess of pressure in the tufts.

The author treats very briefly of scarlatinous nephritis, and adopts the view that the disease in the kidney is an acute or sub-acute interstitial nephritis.

We regret that we are unable to compliment the translator of this work on the style of his English. We are astonished to find Germans, French, and English indiscriminately called "Mr." (evidently a slavish translation of the French Monsieur). One is astonished to meet with Professor Ludwig under the designation of Mr. Ludwig, and so on. The translator is surely unaccustomed to ordinary medical phraseology when he uses the expression "great enlargements" in referring to high magnifying powers of the microscope. We have marked many similar peculiarities, but these will suffice.

Student's Primer on the Urine. By J. TRAVIS WHITTAKER, M.D. London: J. & A. Churchill. 1880.

OF the numerous special studies which, of recent years, have received the attention of physicians, none has undergone more complete elucidation, and none has been found more pregnant with important results, than a study of the urine. The urine is very rich in effete material, the result of histo-genetic and other changes going on in the body, and thus affords great scope, through its chemical and microscopical examination, for obtaining valuable information as to the normal physiological processes going on in the system, and the deviations therefrom.

Although the literature of the subject is tolerably rich, yet the student must often find the need of a handy reliable work, like the one under review, to guide his examination of the urine, and to show him the forms and names of the numerous objects he sees in the microscopic field. Treatises on the urine are much too cumbersome for ward use, and some of the best of them are sadly deficient in plates, a want which this primer faithfully supplies.

The first twenty-nine pages are devoted to the physical condition of the urine, with the quantitative and qualitative analysis of its principal constituents. In a very succinct and clear manner, the author deals with the conditions influencing the amount voided; the variations in hue, and the circumstances under which they occur; the normal odour, and how it is affected by certain drugs and states of the system, or of the urinary tract; the specific gravity, and how it is affected by certain diseases. The acidity and alkalinity of the urine; the cloudiness, turbidity, and sediments, are explicitly stated, and merit special commendation.

The quantitative analysis of the urine does not generally receive the attention which it deserves, owing to the unavoidable trouble consequent on the necessary manipulation, but, in the present advancing state of medical science, no well educated physician can neglect such means of obtaining valuable information in important cases, and therefore it is incumbent on students to make themselves well acquainted with volumetric analysis, the value of which they will more fully appreciate in after years. We are sorry to say that this is, in our opinion, the least satisfactory part of the book. The brevity which, from a student's point of view, we have highly commended, now becomes rather confusing, and we think that the student untutored in quantitative analysis will find a little further instruction from his teacher necessary for its full comprehension.

In the estimation of albumen, he omits Bödeker's process of titration with the ferrocyanide of potassium, which is certainly more accurate than the handy methods recommended by Dr. Whittaker, though perhaps the latter are sufficiently accurate for all practical purposes.

In estimating the chlorides, we think it would have been better if Dr. Whittaker had omitted the nitrate of silver process, which is rather complicated when *correctly* performed, and given the titration with proto-nitrate of mercury more fully, as this latter is much simpler, and more accurate. In his short description of Liebig's method for determining the chlorides, he neglects to mention that the excess of baryta should be neutralized with nitric acid.

The following paragraph, at page 21, is scarcely intelligible:—"Multiply the amount of urine used in the experiment by the amount of urine passed in the day to obtain the daily secretion of urea." We presume he means to divide the amount of urine passed in the day by the quantity experimented on, and then multiply the quotient by the amount of urea found in that submitted to analysis, in order to arrive at the daily excretion of urea.

A simpler method of estimating the earthy phosphates than the gravimetric process, is to precipitate them with caustic ammonia, collect, and wash the precipitate with ammoniacal water, heat, and dissolve with acetic acid. The amount can then be determined by volumetric analysis with the standard uranium and soda solutions.

The student can scarcely be expected to possess such works as those of Neubauer and Vogel on the urine, and Sutton on volumetric analysis, and if this little book were a little more complete on quantitative analysis, it would render their possession to him unnecessary, while it would add much to its value and very little to its bulk. We would, therefore, recommend the author in the next edition to enter more fully into volumetric analysis, and to give the French system of weights and measures, as they are certain to find their way into the clinical ward, as well as the scientific laboratory.

The author's observations on the microscopical appearances of the sediment and deposits are illustrated by fifteen beautifully executed plates, which give an especial value to the work. They have been etched by Dr. Whittaker on copper, and the delineations are so true to nature that no student, having once observed them, could fail to recognise their types under the microscope. The plates cover the whole field of the microscopic examination of urine, and are all equally good, and so admirably executed, that they alone would render the book very valuable to the student.

In conclusion, we think the book has supplied a want in medical literature, and is one which should be possessed by every student who has a clinical examination to confront, and by every intelligent practitioner who wishes to avail himself of the valuable information to be derived from a physical, chemical, and microscopical examination of the urine.

On Loss of Weight, Blood Spitting, and Lung Disease. By HORACE DOBELL, M.D. Second edition. London: J. & A. Churchill. 1880.

THERE is something attractive to the practical mind in such a title as the above. We so often find cases of blood spitting without any obvious explanation, and also cases of marked loss of weight without any definite signs of disease, that one is glad to think of these important subjects being discussed in their clinical aspects. The term Lung Disease is likewise attractive, as indicating some broad and intelligible view in these days of elaborate disputations as to the various forms of phthisis, and the tubercular or non-tubercular character of such affections. We presume it is owing to such considerations that the first edition of this work has been so soon exhausted, the dates of the prefaces in the two editions being November 1878, and November 1879.

There can be no doubt that Dr. Dobell is an acute and industrious worker, and his views on the subject of tuberculosis are well known to be peculiar, and so far original: in the region of therapeutics his pancreatic emulsion is regarded with more or less favour by a large proportion of the profession, and by many who have no great liking for his elaborate theoretical views on the nature of consumption.

In this volume the reader will find the latest form in which Dr. Dobell holds his theory of tubercular disease, and the most important portions of his former treatises are incorporated here. Moreover, in the second part of the volume the "Observations, Opinions, and Doctrines" of others are given in the form of summary and abstract, which may be interesting to those who wish to have a rapid survey of the extraordinary confusion of opinion prevailing as to the nature of tuberculosis.

The first part of the work deals largely in statistical groups and tables showing the relation, in point of time and intensity, of hæmoptysis and loss of weight. It is extremely interesting, and, no doubt, very valuable; but we are not disposed to regard the results brought out in this way as so firmly established as the author seems to believe. The results of the tabulation of the cases, although no doubt done as fairly as was possible, may be seriously affected by the very conditions which Dr. Dobell imposed upon himself to secure their accuracy and fairness. For example:—"All cases were rejected who could not stand a searching cross-examination as to the time at which the *first loss of weight*, if any, had begun;" and "All cases were rejected unless the heaviest weight before the occurrence of hæmoptysis could be stated from *actual weighing*" (p. 10). May not such conditions as these have a serious effect in determining the clinical features brought out by the statistics? Can we feel sure that the results thus obtained are in any sense a fair sample of the conditions investigated? We suppose that the effect of these exclusions would be to give a larger proportion than usual of cases characterised by such sudden and unaccountable loss of weight as to direct the thoughts of the patient to the weighing machine. Dr. Dobell's table (p. 14) shows that the—

"First hæmoptysis occurred *before* first loss of weight in 8 %.
after first loss of weight in 82 %.
at the same time as first loss of weight in 10 %."

The results seem to us open to suspicion as being inevitably determined in part by the method of selecting the cases. No doubt the clinical details of the cases are full of interest and instruction.

In connection with the subject of treatment, Dr. Dobell does well to lessen somewhat the extremely pancreatic view of the pathology and therapeutics of tuberculosis by the introduction of a new section in this edition, on "The Functions and Disorders of the Liver, and their management in accordance with the results of modern discovery." Not only in this section, but throughout the other parts of the volume bearing on treatment, the practitioner will find many useful suggestions as to the management of phthisical cases; and likewise some ingenious explanations as to why the same treatment may, according to the peculiarities of the case, seem at one time to be useful, and at another pernicious, even in the same patient.

REPORTS OF HOSPITAL AND PRIVATE PRACTICE.

GLASGOW ROYAL INFIRMARY.

REPORTS UNDER THE SUPERVISION OF DR. J. WALLACE ANDERSON.

FROM DR. SCOTT ORR'S WARDS.

A CASE OF SCORBUTUS AND ONE OF PURPURA HÆMORRHAGICA CONTRASTED.—Two cases, presenting at first sight remarkably similar symptoms, were lately admitted to Dr. Scott Orr's Wards on the same week. Both patients were young men, not unlike each other in appearance; they were very anæmic, and had, as the most prominent symptom of their complaint, numerous subcutaneous extravasations of blood in the form of petechiæ. It appeared as if they suffered from the same disease, but a slight examination showed a very important distinction, which time has only too faithfully borne out.

CASE I.—J. M., æt. 23, admitted 24th April, 1880. Patient is pale, but does not look as if he had lost much flesh. Complains of weakness, and points to the petechial spots. On examining the legs, they are found to be considerably discoloured at and above the ankles. It is most marked on the right leg, where the colour approaches that of a severe bruise. The muscles are hard and brawny to the touch, and painful on pressure or movement. The gums do not present any very characteristic appearance, nor is there any fetor of the breath. There is a hard circumscribed swelling about the size of a pigeon's egg, behind the angle of the right jaw. Patient states that, up to about five weeks ago, he had been accustomed to have his meals regularly at home, and his food had always been of a good, substantial character. At that time, on account of his being employed at some distance from home, all his food had to be carried, and although he appears to have had a fair amount of animal diet, it was usually salted or preserved in some artificial way. He had certainly never freshly cooked food. He had occasionally potatoes, but no green vegetables. About six weeks before admission, he first noticed a slight swelling about the ankles, and this was shortly followed by the appearance of the spots referred to. Pains then set in—first at the ankles, but very soon shooting up the legs, especially on walking. Discoloration of the skin about the ankles followed, and this, with the other symptoms, became more and more pronounced. Since then, he has once or twice noticed his gums bleed whilst chewing his food, and he has had one or two attacks of bleeding from the nose. On admission, he was put on tincture of steel with infusion of cinchona. Ordered also lime juice, with the best diet, to which an extra allowance of fresh vegetables was ordered. For a few days after admission, he walked with increasing difficulty, on account of the pain and stiffness of the muscles of the leg becoming rather aggravated, but shortly afterwards he began to improve in all respects, and this improvement has gone on uninterruptedly. His colour and general appearance are now (May 15th) very much improved, and as he is rapidly gaining strength, he will soon be fit for dismissal.

Case II.—D. M., æt. 20, admitted 26th April, 1880, suffering from extreme anæmia and great weakness. He is not able to stand without support. There are numerous petechiæ over the whole body, but particularly on the lower limbs. There are no larger extravasations nor discoloration of the skin anywhere. Patient does not give a very clear history of his complaint, and seems to have noted nothing very special about his condition, except that he has been getting gradually weaker during the last two months. Since his admission, we have learned that he had been going about the country looking for work, but had never complained of anything but a soreness of the gums, or toothache, as he sometimes termed it, and swelling of the face with occasional headache. On admission, it was noticed that he had pretty free hæmorrhage from the gums; they were not swollen, however, nor did they present any particular appearance beyond their very anæmic condition in common with the rest of the body. His breath was most markedly fetid. His diet, as a rule, appears to have been of a fairly substantial character—better than that of previous patient, as he had either fresh meat, bread and butter, for dinner, or vegetable broth and potatoes. He had sometimes a meat breakfast, and usually porridge for supper. It has been ascertained since that he was rather dissipated in his habits, and probably, of late, his diet may not have been so good, nor his meals so regularly taken as he states. Ordered iron, sulphuric acid, and infusion of quassia in full doses. To get chicken soup, vegetable soup, fresh vegetables in addition, or similar light nourishing diet. On 1st May he had epistaxis, which continued for four or five hours, when he must have lost six or eight ounces of blood. The bleeding from the nose ceased spontaneously, but as there was still some hæmorrhage from the gums, four grains of ergotine were administered subcutaneously after the morning visit. This was repeated in the evening, but afterwards discontinued as the hæmorrhage from the gums was only occasional, and very slight in amount. There was also blood in the urine, but to an extent not exactly ascertained. None from the bowels. Patient became gradually weaker, and died from asthenia on 6th May.

The following is Dr. Foulis' report of the *post-mortem* examination:—"Body small; surface pale; tibiæ bowed forwards. On upper arm, and elsewhere, are a few pale purple spots, raised and firm, and on incising these there is seen echymosis in the skin and subcutaneous tissue. Calvarium very pale; marrow pale, and not at all fatty, the bone rapidly drying, and assuming a dry, chalky-white appearance. There is a little effusion of blood on lining of dura mater near cerebellum. Numerous punctiform hæmorrhages in pia mater and interior of cerebellum, giving it a red appearance. Throughout the white matter of the cerebrum are very numerous, small, red points (not removable by water, or by scraping lightly with knife); the cortex of the cerebrum seems to be free, and is rather pale; while, in the corpora striata and optic thalami, are abundant punctiform hæmorrhages. The spinal cord is not examined, as the spine has a very marked scoliosis, and it is removed and kept entire. Both ears contain a reddish mucus; and the lining of tympanum is injected and thickened. In both retinæ there are small punctiform hæmorrhages. Fauces, larynx, trachea, and tongue normal: a few punctiform hæmorrhages in gullet: none found in any of the voluntary muscles of the body. The pericardium and endocardium are dotted with similar hæmorrhages: a few exist in the heart tissue, which is pale and firm: valves and aorta normal. Pleura and lungs have many half diffused looking punctiform hæmorrhages: tissue of lungs generally crepitant and healthy: air tubes pale. Liver and spleen remarkably pale; and edges of liver seem rounded and full. Kidneys pale, but contain abundant hæmorrhages, especially in cortex: capsule easily removed: kidneys not enlarged. Bladder contains 12 oz. of clear urine. Stomach wall dotted with hæmorrhage; as is also the mucous membrane near and on the Peyer's patches of intestine. Bones, patellæ, and ends of long bones very pale; no fat seen in them. Medulla of long bones pale, soft, and grey."

This latter case was clearly one of purpura, in the most restricted sense of the term. There were none of the symptoms specially characteristic of scurvy, as in the former case. It could not, at least so clearly, be traced to improper diet; while it was absolutely unaffected by the ordinary anti-scorbutic remedies, or by any treatment whatever.

CASE OF RHEUMATIC FEVER—RELAPSE CUT SHORT BY SALICYLATE OF SODA.—This case may be worth noting, as we can compare the duration of the first attack with that of the relapse under the treatment above mentioned. T. O., æt. 35, admitted 24th April, 1880. For the last few months, patient has been engaged at an iron work, and has been much exposed to heats and colds. Rather more than a fortnight before admission, he began to feel pain in the muscles of right arm and left leg. It rapidly increased in severity, at the same time locating itself chiefly in the joints. He was compelled to take to his bed, and very soon was hardly able to move, on account of the severity of the pain. For a time, he says, he could move nothing but his right arm, from the elbow downwards. He had no medical attendant; was under no treatment; but quietly waited till he could walk to the infirmary. This he did on the above date, with considerable difficulty, as he had still a good deal of pain in the knees and ankles. For the first few days he could walk about the ward a little; but, in the course of one night, the pains returned to such an extent that he was almost as bad as before. The temperature was forgotten to be taken with the thermometer; but it was certainly not high, considering the suddenness of the relapse, and the severity of the pain. On the second morning of the relapse it was resolved at once to try salicylate of soda, in 20 gr. doses, every three hours. On the following morning (3rd May), patient is found to be perspiring freely, and the pains are almost completely gone. States that, after the second dose of the medicine, the pain became much less: he asks now if he will be allowed to get up. The salicylate of soda to be continued every four hours. Next morning patient expressed himself as being still better. Perspiring very freely. The salicylate of soda discontinued. He was confined strictly to bed for some days, much to his annoyance, as he had only a slight pain in right shoulder. *15th May.*—The patient is now up all day, and feels quite well. Temperature has been normal since 3rd May. A slight "ringing in the head" was the only physiological effect of the drug spoken of, and only referred to on being questioned.

GLASGOW EYE INFIRMARY:

REPORT BY GEORGE HUNTER, RESIDENT MEDICAL CLERK.

CASE OF GONORRHŒAL OPHTHALMIA SUCCESSFULLY TREATED BY SOLUTION OF BORACIC ACID.—W. M., æt. 17, appeared at the Dispensary on the 29th March, 1880, with symptoms of acute catarrhal ophthalmia in the left eye, for which Dr. Reid ordered bichloride of mercury lotion, with belladonna; patient also to have a dose of calomel and jalap in the evening.

Two days later, patient returned with the symptoms much aggravated—viz., lividity of the lids, with œdema of ocular and palpebral conjunctiva, and profuse puro-mucous discharge—in short, with all the symptoms of a gonorrhœal ophthalmia. On being closely questioned, patient denied having any urethral discharge; but the presumption was so strongly in favour of the opinion that the affection was of a contagious nature, that he was urged to come into the House. Meantime a 10-grain solution of nitrate of silver was ordered to be dropped into the eye, and the lotion of the bichloride was replaced by a 1 per cent solution of boracic acid. He returned in the afternoon, and afterwards confessed that he had a urethral discharge, for which he had been under treatment, and was now about well.

He was sent to bed, and, in addition to keeping the parts clean by bathing with the boracic lotion, cloths saturated in the solution, ice cold, were kept on the lids during the intervals of bathing. A light, nutritious diet was ordered, with a grain of quinine with nitro-hydrochloric acid, thrice daily.

On the 3rd of April, three days after admission, the discharge, which, from being chiefly serous with traces of pus, had assumed a purulent character, was much less in amount; but the ocular conjunctiva around the cornea was extensively infiltrated. The cornea itself remained perfectly healthy. The chemosis of the conjunctiva continued to increase till the 5th of April, when it was so extreme that only the central part of the cornea could be seen. Some hypertrophied folds of conjunctiva, which hung down from beneath the upper lid and prevented the thorough cleansing of the eye, were excised by Dr. Reid, and there was pretty free bleeding, which apparently gave the patient considerable relief.

On the 7th of April, the chemosis, while it had not increased, was still very little less than before; the discharge, however, had all but ceased. The use of the nitrate of silver was discontinued on the 13th, when the infiltration of the conjunctiva was apparently beginning to subside.

On the 17th, the chemosis was noted as rapidly subsiding, and the normal appearance of the sclerotic returning above. The subsidence of the chemosis now allowed of a thorough examination of the cornea, which was free of infiltration at any part, but showed a small crescentic ulcer at its upper aspect. Mackenzie's compound lotion was therefore substituted for the solution of boracic acid.

On the 19th, patient was allowed to rise, wearing a light bandage, as the ulcer was healing, and the general appearance of the eye almost normal; and on *the 26th* the ulcer was quite healed, and the patient was dismissed well.

The urethral affection required hardly any further treatment than had been adopted outside; it seemed never to have been very severe.

Remarks.—The treatment carried out as reported above has been followed here for some time, in nearly all cases with purulent discharge,and with better results apparently than used to be obtained in such cases under other methods. Its success is probably due to the fact that while it allows of the use of the ordinary antiphlogistic and astringent remedies, the important indications of (1), keeping the eye clean, and (2), neutralising the septic influence of the pus generated, are observed in the employment of boracic acid, which seems to act better perhaps than any of the substances in ordinary use, and certainly causes less irritation than most of them.

The case in question could hardly be regarded as a bad one of gonorrhœal ophthalmia; but it is seldom that any case is treated to a termination with so little complication as the slight ulceration of the cornea which has been mentioned above. The position of the ulcer, too, seems to demonstrate the necessity for keeping the eye free of any irritating discharge. For some time before it was observed, the chemosis was so great that one could not be sure of having completely removed all the discharge in bathing the eye; and it seems quite possible that some of it may have got lodged under the chemosed conjunctiva, and have led to the destruction of the corneal tissue by its contact.

MEETINGS OF SOCIETIES.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.

SESSION 1879–80.

MEETING V.—6TH FEBRUARY, 1880.

DR. FERGUS, *President, in the Chair.*

DR. M'GOWN, Millport, read a paper on INTESTINAL OBSTRUCTION CURED BY COLO-PUNCTURE, which will be found at p. 441.

Dr. Hector C. Cameron, as the surgeon who had operated in the case detailed by Dr. M'Gown, said that the fortunate result of a permanent cure following a single operation of colo-puncture must be viewed as a piece of good luck. At the same time there could be no doubt that the patient's recovery was due to the operation, since he had been troubled with the distension of the abdomen for the long period of nine months, and immediately after the operation he began to void flatus *per anum*, and got well. He had never seen a case in which the abdominal distension was so enormous, the ensiform process being curved straight forward, the legs and thighs extremely œdematous, the breathing affected on the slightest exertion. It was obvious that the process of relieving him by the tube had become very irksome, and could not be repeated at short intervals. From the absence of vomiting and other signs, he was induced to think that there was no mechanical obstruction of the gut, but that the bowel was more or less in a state of paralysis; that the case, in fact, was analogous to one of retention of urine from muscular atony of the bladder. In 1873 he read, before this Society, a case in which he operated by colo-puncture. In that case he punctured nine times in eight days, the patient making a good recovery. In operating in that case he had scarcely any rules to guide him. His experience then acquired suggested to him certain precautions to be followed in order to make the operation safe; without these it was certainly dangerous. He first operated with an ordinary hydrocele canula and trocar. After a considerable quantity of gas had escaped, the rush suddenly stopped. The reason was that the gut in collapsing had forced itself from the very short part of the canula it contained in its cavity. On operating the next day, with a canula 3½ inches in length, the result was satisfactory; but, in the anxiety to expel all the gas, too firm pressure was kept up on the abdomen, and a quantity of liquid fæces was pressed through the canula. He removed the canula, keeping his thumb over the orifice, so as to retain any fluid in it, in the same manner as one lifts fluid in a pipette. On a subsequent occasion he punctured in the situation of the descending colon, the instrument being introduced parallel to the bed. On withdrawing the trocar a quantity of liquid fæces shot out on the carpet for some distance. The position was evidently faulty, and, on putting the instrument at right angles to the surface of the bed, no fæces escaped.

Dr. Gairdner said that his connection with Dr. M'Gown's case was of the slightest description. The details were given to him by Dr. Grieve, and finding that medical treatment of all kinds had apparently got a fair trial, he suggested that the further treatment was rather a matter of surgery than of medicine; and it was only on a second request that he had seen the case. As to the diagnosis, he doubted whether there had been any mechanical obstruction, and whether, therefore, the term "strangulation," which Dr. M'Gown used, was properly applicable. He agreed with Dr. Cameron, that the case was probably parallel to one in which paralysis of the urinary bladder resulted from over-distension; but in this case the paralysis would extend over the greater part of the intestinal tract. In all probability some abnormal condition of the nervous system of the patient, leading to a want of innervation in the sympathetic system, was the cause of the mischief; and this view might also explain the success of colo-puncture.

Dr. Menzies said that, in regard to the theory of paralysis of the muscles of the colon, there were some facts which pointed rather to obstruction definitely located near the ilio-cœcal valve. Thus, no gas came off unless the tube employed was long. After the colo-puncture less gas escaped than by the introduction of a long tube. He was inclined to think that some partial invagination of the bowel had taken place, though he admitted his inability to account for the success of colo-puncture on any theory which he could form.

Dr. Glaister related a case in which he had performed colo-puncture for obstruction of the bowels, in a woman about 68 years of age. In a first attack of constipation, enemata and other means had been tried without success. The vomiting was incessant for some days, and eventually stercoraceous. Belladonna was persistently administered, and ultimately with apparent success. In about a month obstruction again occurred. Nutrient enemata were had recourse to, but the case got worse, nothing coming away after large enemata; colo-puncture was performed with the effect of reducing the distension, there escaping with the gas a small quantity of fluid fæces. He had had little hope of success, and the woman died. On *post-mortem* examination he found an organic stricture at the sigmoid flexure. No fæces had escaped into the peritoneal cavity. In the first illness he had flattered himself that belladonna had brought about the successful result, but it was probable that it was a mere coincidence.

Dr. Joseph Coats said that the exact pathological condition in Dr. M'Gown's case was a matter of interest. About eighteen months ago he had seen, at a *post-mortem* examination, a case of twisting of the sigmoid flexure, and Dr. M'Gown's case resembled this so closely in many respects that he could not help thinking that the pathology might be similar.* There had been enormous distension of the abdomen, caused entirely by the distension of the sigmoid flexure. Colo-puncture had been resorted to, but without success. He was of opinion that the phenomena of Dr. M'Gown's case were best explicable on the supposition of a twist of the gut. It would be easy to pass a tube two feet up the rectum, and the flatulence would be relieved by this treatment. This supposition would also explain the success of the operation of colo-puncture. The passing up of the tube from below would have the effect of keeping up the twist, whereas, by letting the gas off from above, the gut would be free to untwist. The theory of paralysis from muscular atony was hardly clear enough, as it was not easy to see why the gas would not escape as soon as the pressure was equalised. He would like to know whether the urine was albuminous during the period of distension.

Mr. John Reid agreed with Dr. Cameron and Dr. Gairdner that it was to paralysis of the colon the obstruction was due. He did not see how twisting of the colon was possible, though it was common enough in the ileum. The paralysis was localised in these cases, only the distended portion of the gut being at fault.

Dr. Cameron said that he had operated in other cases besides these which he had mentioned. In one case the patient had been already operated on for scirrhus of the mamma. The intestinal disease was evidently malignant.

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* This case is related at p. 445.

Colo-puncture, however, gave great temporary relief. In another case he performed colo-puncture, and afterwards gastrotomy. There was a hard little tumour in the descending colon. He sewed up the incision, and at the *post-mortem* examination there was no appearance of any peritoneal mischief. In regard to Dr. Coats' difficulty about the theory of paralysis, the affection in a cow which had over fed itself was an analogous case. The cow filled its paunch, and then found its power of ruminating gone. Fermentation in the mass of food in the paunch took place, and enormous distension from gas followed. In such cases the farmer did not hesitate to puncture the rumen, and the operation was generally very successful.

Dr. J. A. Adams thought that the theory of a twist in the gut was most in accordance with the facts, and more especially with the fact of the cure as effected by colo-puncture.

Dr. M'Gown said that the idea of paralysis was what had occurred to himself, and he had given large doses of opium, and then of belladonna, but with no good result. Galvanism had also been tried without success, though there was considerable motion in the colon on its application, appearing to prove that there was no paralysis of the muscular coat of the bowel. His own opinion inclined to the notion of there having been some band of lymph obstructing the bowel.

GLASGOW PATHOLOGICAL AND CLINICAL SOCIETY.

SESSION 1879–80.

MEETING VI.—10th FEBRUARY, 1880.

DR. ALEXANDER ROBERTSON, *President, in the Chair.*

DR. GAIRDNER showed a BOY, AGED 15, WHO HAD COMPLETELY RECOVERED FROM HYDRONEPHROSIS, OR SOME CYSTIC DISEASE IN THE ABDOMEN.—When first seen, the tumour filled three-fourths of the abdomen, and it was believed to be a hydatid of the liver; but afterwards it was diagnosed as having its origin in the left side of the abdomen, probably connected with the spleen or left kidney—most likely the kidney. It was very large and tense, and the question of paracentesis had been raised, when suddenly there occurred a profuse liquid discharge from the bowels, with a great diminution in the size of the tumour.

It soon filled again, and again there was a subsidence of it, coincident with a profuse discharge of urine. There were rather serious constitutional symptoms, but he soon rallied, and the tumour did not fill again. Now there is nothing to be detected in the abdomen, after a lapse of some years. Dr. Gairdner thought it most likely to have been a hydronephrosis.

Dr. Gairdner showed specimens of CYSTIC DISEASE OF KIDNEY.—Both kidneys were involved. S. M., aged 43, had had repeated attacks of hæmaturia for 18 years, associated with pain, not definitely renal in its origin, but in the loins, commencing about the bottom of the chest, chiefly on the right side. There was nothing like a history of renal calculus. He had, in all, five attacks of hæmaturia; and, after the first three, his health still remained good. Subsequently, however, it became impaired; and, on the occurrence of the last hæmorrhage, just before his admission to hospital, he had great irritability of the bladder.

A tumour, occupying the region of the left kidney, was easily detected; and there were also more obscure evidences of a like condition in the right renal region. Further examination was postponed, but, during the course of the same night, uræmic symptoms set in, from which he died.

Post-mortem examination by Dr. Joseph Coats revealed the fact of cystic disease of both kidneys. The right kidney weighed 19 oz., and was 6 inches long, the left weighed 29 oz., and was 7½ inches long; and both showed an extreme degree of cystic degeneration. The heart was enlarged, weighing 12 oz., and in the apices of both lungs there were cavities from dilated bronchi.

Dr. Joseph Coats, in referring to the *post-mortem* appearances, said that he had not been able to make a perfectly full and complete examination of the tissue between the cysts; but he had convinced himself that there was a considerable amount of renal tissue remaining, the most prominent renal structures present being the Malpighian tufts. But the renal tissue was not normal. It was very much in the condition of that in the contracted kidney, of interstitial nephritis. There were large collections of inflammatory cells separating the proper renal structures. This was not remarkable, considering the great irritation produced by the growing cysts. In this relation, Dr. Coats referred to the fact that, in such cases of cystic degeneration, the secretion of urine has, in some cases, even been increased in quantity, although there was little renal tissue remaining; and he connected this with the excessive secretion of urine in cases of contracted kidney. He regarded this as confirmatory of the view—that the secretion of the water of the urine occurs essentially at the Malpighian tufts; and that the other constituents of the kidney have rather the effect of concentrating the urine.

Dr. Coats regarded the cystic degeneration, even though found in a comparatively old man, as congenital—at least in its origin. In connection with this, it was interesting to find that there was a congenital malformation of the aortic valve. The valve had only two curtains, one of which was much larger than the other, and showed a partial septum running up from its middle on to the aortic wall. The valve was the seat of a slight chronic endocarditis; but there was no evidence that it had been incompetent.

DR. JOSEPH COATS showed AN EXAMPLE OF EMBOLISM OF THE SUPERIOR MESENTERIC ARTERY.—The source of the embolism was looked for in the heart, and here there were two possible sources. The mitral valve was greatly thickened and its orifice contracted; it presented very abundant calcareous deposition. At one point a rough surface was shown, from which a piece of calcareous matter had obviously been recently carried away. Besides this, there were globular thrombi in the left auricular appendage, one of which was very loosely attached. Embolic infarctions, some of them recent, were found in the kidneys and spleen. On opening the abdomen, the most prominent appearance was a dark red colour of most of the folds of the intestine and of the right side of the great omentum; with occasional fibrinous exudation. This led to the examination of the superior mesenteric artery, which was found plugged at the off-giving of the colica dextra, which was occluded by a prolongation of the plug. The dark colour of the intestine existed in the parts supplied by the artery beyond the plug—namely, the ascending and a small portion of the transverse colon, the ileum and a considerable portion of the jejunum. These portions of intestine contained considerable quantities of altered blood, and the mucous membrane was in a condition resembling that of a half-gangrenous gut from strangulation.

Dr. Coats commented on the fact that, according to Cohnheim, embolism produces serious results in end-arteries—that is, arteries which do not anastomose. The superior mesenteric has very wide anastomoses, yet, embolism of it produces disastrous results, as if it were an end-artery. Cohnheim, on the ground of experiment, explains this by the great vulnerability of the intestinal vessels, asserting that deprivation of blood for a few hours renders these vessels incapable of carrying on the circulation, so that when plugged their integrity is lost before the circulation is re-established, and the establishment of the circulation only increases the hæmorrhage.

Dr. Joseph Coats also showed AN EXAMPLE OF SARCOMA OF THE MEDIASTINUM.—The tumour had originated in the bronchial glands, and in accordance with its character as a sarcoma, it had extended, and involved in its substance a great variety of tissues. Of most interest in relation to the clinical facts was its extension into the veins. The superior vena cava was completely incorporated, as was also the azygos. The innominates, in their lower parts, were incorporated completely, but in their upper parts the calibre of the vessels was distinguishable, being filled partly with old clot, and partly with tumour tissue. In a fine transverse section of the left innominate shown to the Society, the process of extension of the tumour into the vein was well seen. The vessel was surrounded by tumour, but its coats, except posteriorly, were preserved. Posteriorly, the wall was broken up and mostly replaced by tumour tissue which also passed into the calibre of the vessel, in which it appeared like a thrombus. On the surface of this thrombus-like prolongation there were still some remains in the form of a pigmented structure of the original blood-thrombus which had doubtless existed. The tumour had also penetrated into the lower part of the trachea and a bronchus, replacing the normal tissues by its own structure. The pericardium and pleura were also, to a slight extent, incorporated in the tumour, and it had penetrated to some extent into the lung.

Dr. Gairdner showed PARASITIC INSECTS FROM HENS, found on the human body. They belonged to the tribe of Acari.

Dr. Macewan showed SPECIMENS OF DECALCIFIED DRAINAGE-TUBES, and explained their preparation and a method of hardening them. He took chicken bones and soaked them in hydrochloric acid for three or four days; the ends were then removed, and they were again placed in the acid. After a few days they became quite supple, and were transferred to a carbolic acid solution, ready for use. He had also tried chromic acid, but it proved a less expeditious method of preparation. The tubes so prepared are less irritating than the India-rubber tubes.

Dr. Foulis remarked that the bones are simply dissolved in a passive manner in the wound, and not by any process of active absorption.

GLASGOW SOUTHERN MEDICAL SOCIETY.

Session 1879–80.

Meeting X.—18th March, 1880.

Mr. Niven, *President, in the Chair.*

Dr. N. Carmichael read a paper on "The Principles of House Drainage considered in relation to Health." The object of Dr. Carmichael's investigations was to ascertain whether excreta, when they have passed through the ordinary water closet and through the trap, "cease to have the power of producing evil, so far as our houses are concerned." The first step in this inquiry is to find what is the condition, and what the contents of the soil pipe, drain, and sewer; the next, to find whether, and to what extent, the gaseous and solid contents of those pipes gain entrance to our houses, under ordinary circumstances. A sharp distinction was made between "sewer gas" and "sewer air." The latter is simply ordinary atmospheric air, with the addition of about 1 per cent of the gases, vapours, and particles (sewer gas proper), given off by decomposing sewage. Experiments were performed with an ordinary syphon trap, in connection with an old water closet and soil pipe that had been in use for a number of years. It was found, by careful testing, that a little over seven grains of carbonic acid, from $\frac{1}{400}$ to $\frac{1}{200}$ of a grain of ammonia, and about $\frac{1}{100}$ of a grain of sulphuretted hydrogen, passed through the trap in twenty-four hours. These represent the only estimable quantities of sewer gases which pass through an ordinary water trap in twenty-four hours. These quantities must be absolutely harmless. To determine whether organic particles —including germs, putrefactive or specific—come through a sound water trap, the cultivation test was employed, a means whereby particles far too few, and perhaps too small, for microscopic detection, are readily recognised. The result of a large number of experiments so performed was to show conclusively that such germs do *not* pass through a sound trap. Water traps, therefore, for the purpose for which they are used (the exclusion from houses of injurious substances contained in the soil pipe), are perfectly trustworthy. They exclude the soil pipe atmosphere to such an extent that what escapes through the water is so little in amount, and is so purified by filtration, as to be perfectly harmless; and they exclude entirely all germs and particles, including, without doubt, the specific germs or contagia of disease which are, so far as known, distinctly particulate.

The dangers to health dependent on the presence of a water closet or kitchen sink in houses are not connected with the trap, but are traceable rather to such faults as bad joints, cracks, and perforations on upper surfaces, made by the carbonic acid in the pipe. A pin hole opening in a soil pipe is sufficient to permit the passage of germs and other particles in considerable quantity, and is thus really a greater source of danger than a sound water trap. The principles, then, which ought to govern the regulation of house drainage are:—

1. All filth, and all organic matter, which are liable to putrefy, should be immediately and completely removed from the inside of the house.

2. All pipes (water closet, bath, sink, or other) discharging such matters should, as far as at all possible, pass directly from the house apparatus to the outside of the house. Drains should not, if it can be avoided, pass under a house.

3. A water trap, to close the house end of every such pipe, should be so arranged as to be thoroughly open to view to its deepest part.

4. There should intervene between the trap and the house no cavity or surface, in or on which foul air or filth can accumulate.

5. All discharge pipes, inside or out of the house, should be well ventilated by openings at top and bottom. In the case of pipes passing through the house for any great distance, this is imperatively called for.

Dr. E. Duncan thought that Dr. Carmichael was to be congratulated on the way in which he had vindicated the water trap. Two points had been established: that the amount of sewer gases which a sound water trap permits to pass, is so extremely small as to be quite insignificant, and that disease germs do not pass over with these gases. When investigating the cause of the outbreak of typhoid fever in Crosshill some years ago, he found that in twenty-three out of twenty-four cases which occurred in a certain crescent the infected milk had been taken; the remaining case was removed to hospital before inquiry could be made. No case occurred after the supply of milk was stopped, and this, he thought, showed that the sewer connections had nothing to do with the spread of the fever. He suggested the application to baths, &c., of the principles Dr. Carmichael had laid down with regard to water-closets.

Dr. Dougall thought Dr. Carmichael's experiments very exhaustive and convincing. He would have liked to have heard the analysis of sewer air with the sewer blocked.

Dr. Carmichael, in reply, stated that he intended to apply the principles he had enunciated to all sewer connections, such as baths, wash-hand basins, sinks, &c. He had not yet finished experimenting.

MEDICAL ITEMS.

UNDER THE DIRECTION OF

ALEX. NAPIER, M.D.

Benzoic Acid in Acute Rheumatism.—Dr. H. Senator reports (*Zeitschr. f. klin. Med.*) very favourably of benzoic acid and the benzoates in the treatment of acute rheumatic polyarthritis. Since the beginning of 1877 he has had under his care 46 cases treated by these remedies. The first group of cases, 22 in number, had benzoic acid or the benzoate of soda (in doses amounting ultimately to about 230 grains per day) and no other medicine; in one of these cases, which was treated with small doses at first, the violence of the disease did not subside till the eleventh day; in 20 cases the pain and fever disappeared in 3–7 days, and in another case in 2 days. There were no relapses, and no cardiac or other complications were observed. That these good results were really due to the benzoic acid is shown by the fact that, in a second group of cases (4) the disease yielded promptly to that remedy, though it had previously resisted treatment by salicylic acid. In a third series of cases (6) benzoic acid failed, but salicylic acid gave immediate relief. From these cases and 14 others, in which salicylic and benzoic acids were used alternately, the author concludes that in benzoic acid we have an agent which exercises a very powerful influence on acute rheumatism, inferior in virtue only to salicylic acid. Its great advantage is, that even in large doses it is well borne by the patient. It and its salts are, therefore, recommended for trial in those cases of polyarthritis in which salicylic acid or its compounds cannot be used, or have been tried and found ineffectual; it may be given in the same doses, or even in larger doses, than the latter remedy.—*Centralblatt. f. d. Med. Wissensch.* No. 19. 1880.

Sulphide of Calcium in the treatment of Suppurating Buboes.—It is generally taught that when the virus from a soft chancre has been carried along a lymphatic vessel, and deposited in an adjacent lymphatic gland, inflammation is at once set up in the substance of the gland; and that the suppuration of such buboes is inevitable. In accordance with these views, also, it is usually advised that glands so affected be encouraged to suppurate, and that the abscess be opened as soon as fluctuation is recognised. Dr. Fessenden A. Otis, however, has been led to doubt the accuracy of these views. and of the practice founded on them. He gives a tabular account of eighteen cases of inflammatory bubo, arising in connection with unmistakable soft sores, and treated systematically by the use of small doses of the sulphide of calcium. Of these, fifteen ended in resolution; and in only the remaining three was the knife ultimately required. These results show either that, if the currently accepted rule be true, only three of these buboes were the result of transference of virus from the sore to the gland, or that the influence of sulphide of calcium in arresting suppuration is as remarkable in the case of chancroidal as in that of phlegmonous inflammation. The apparent success of the drug in this series of cases suggests a trial of its efficacy in all instances of threatened glandular suppuration, whether associated with chancroid, or of purely sympathetic origin.—*New York Med. Journal.* May, 1880.

Tonic Glycerine.—There are many patients to whom cod liver oil cannot be administered, as it destroys their appetite, and produces dyspepsia. Dr. Larmande highly recommends "tonic glycerine" as a substitute for the oil in such cases. This is made by adding 30 drops of tincture of iodine, and 5 grains of iodide of potassium, to 9½ ounces (by weight) of glycerine. A tablespoonful should be taken a quarter of an hour before each meal. This generally restores the appetite, and removes constipation, if it be present. For children or delicate persons, one-sixth part of the glycerine may be omitted, and replaced by syrup of raspberries.—(*Revue Médicale*)—*Lyon Médical.* 25th April, 1880.

Treatment of Endometritis.—Dr. J. Hickinbotham protests vigorously against the routine use of caustics in the treatment of endometritis. The method of treatment which he advocates is, first, the adoption of such measures as will tend to restore the general health and give tone to the nervous system; the patient should, therefore, be relieved from work and worry, lactation, &c. Secondly, such remedies should be employed locally as will soothe the irritation of the parts; this indication is met by the application of direct anodynes, of which the best are morphia and belladonna. The point of a Playfair's probe may be smeared with soft extract of belladonna and passed into the womb, and allowed to remain there a few seconds; or morphia may be used in the same manner by taking up $\frac{1}{3}$ or $\frac{1}{2}$ a grain on the point of a moistened probe or sound. Belladonna plasters on the sacrum, opiate suppositories, the glycerine tampon, local scarification, all prove occasionally useful. When much aching remains after the acute symptoms have disappeared, a blister over the sacrum will generally remove it. Phosphorus, iron, strychnine, or the bromides, may be given internally.—*Birmingham Medical Review.* April, 1880.

Oxalate of Cerium in Pertussis.—Morje claims for this drug in hooping-cough that—1, it decreases the number of attacks, and thereby reduces the violence of the disease, often checking it instantly; 2, it is easily administered, as only one dose is required in twenty-four hours; 3, nocturnal quietude is insured; 4, the possibility of complications is lessened. The dose used was from 1 to 3 grains, given before breakfast, and was kept up for one week after the whoop had ceased. M. employed the remedy in ten cases, ranging from 1 to 7 years of age.—*N. Y. Med. Record.—St. Louis Cour. of Med.* Sept., 1879.—G. S. M.

Phosphate of Zinc.—M. Tedenat usually employs this salt of zinc in preference to the nitrate, chiefly on account of its greater insolubility in the acid juices of the stomach. Its action as a remedy in diarrhœa is the same as that of the nitrate, but the dose is less—1–2 grammes. It may be given in precisely the same way as the nitrate.—(*Montpellier Médical*)—*Bull. Gén. de Thérap.* 15th May, 1880.

Rouge's Operation.—In the *Australian Medical Journal*, December, 1879, Dr. Wm. Gardner, a Glasgow graduate, records some cases with a view to drawing the attention of the profession to the advantages of this operation. In 1873, Rouge, of Lausanne, published an account of eight cases of ozæna successfully treated by dissecting up the upper lip, and freely dividing the lateral cartilages and the septum nasi. The first case so treated by Dr. Gardner was one of inveterate ozæna. The hæmorrhage was rather profuse, but was soon controlled by the pressure of sponges wrung out of hot water. A piece of dead bone was removed, and the upper lip relaid in position, and detained by a strip of plaster. In a few days the wound was perfectly healed, and no trace of smell could be detected. In the same way he has successfully removed a sequestrum from the hard palate. He prefers an operation on this principle also, in opening the antrum externally for chronic suppuration in its cavity; and by the same method he has removed a sebaceous tumour from the lower margin of the orbit, without external wound.—G. S. M.

Cheken in Winter Cough.—Cheken (or chekan, or chequen) is an evergreen shrub which grows abundantly in the central provinces of Chili, and resembles closely our common myrtle. It belongs to the genus Eugenia, or the closely allied genus Myrtus. It has been in use for some years in Valparaiso, in the treatment of widely different complaints—as an inhalation in diphtheria, laryngitis, bronchitis, and bronchorrhœa; as an injection in gonorrhœa, cystitis, &c. Internally it is said to aid digestion, allay cough, facilitate expectoration, and stimulate the kidneys to action; it also acts well as an astringent in hæmoptysis. Dr. William Murrell gives here (*Practitioner*, May, 1880) the results of a trial of this drug in fifteen cases of chronic bronchitis with emphysema. The ages of the patients varied from 36 to 51; they were all bad cases, most of them of many years' duration. The liquid extract of cheken, made according to the directions given in the U.S. Pharmacopœia for the preparation of fluid extracts, corresponding in strength to the fluid extract of cinchona, was ordered in two-drachm doses in a little water every four hours, the dose being usually increased to half an ounce at the end of a week. It was always taken without difficulty. In all cases some benefit was obtained, and in most instances the relief was very marked. There was in a few days a decided improvement in the cough, expectoration was from the first easier, and soon diminished in quantity, and finally the dyspnœa was less.

Even in cases of phthisis some benefit was experienced. Thus, in one case the breathing became easier, the night sweating ceased, cough diminished, the expectoration became less tenacious, and came up more readily. In three other cases, cough and expectoration were markedly lessened; but in two cases no improvement took place.

Large doses of cheken are often borne well; one patient took, experimentally, an ounce and a half of the liquid extract three times a day, for a week, without the slightest inconvenience or any unpleasant effect, except constipation.

Treatment of the Night Sweats in Phthisis.—In treating a case of phthisis, in which the night sweats were very profuse, and had resisted all the usual remedies, Dr. Kohnhorn thought that the official dusting powder used in the German army to prevent foot sores, might be employed with advantage. This powder consists of 3 parts of salicylic acid, 10 of starch, and 87 of talc. The result was striking; the sweating was arrested the first night the powder was dusted on, and six months after it had not returned. In a second case this treatment proved equally successful. The powder should be sprinkled over the whole of the body every night. If, when the patient is about to retire at night, his skin be dry, it may be rubbed with lard, or moistened with an alcoholic solution of tannin, to make the powder adhere. To prevent sneezing and coughing, which the inhalation of any of the powder would certainly set up, the patient's mouth and nose must be covered with a cloth while he is being sprinkled. —(*Berl. Klin. Wochenschr.*)—*Bull. Gén. de Thérap.* 15th May, 1880.

The Solanaceous Alkaloids.—Professor A. Ladenburg of the University of Kiel, who has already made some important discoveries regarding the constitution and products of decomposition of alkaloids, has just published, in the *Berichte der Deutschen Chem. Gesselsch.*, vol. xiii, 1880, the results of further investigations on the solanaceous alkaloids, atropine, hyoscyamine, daturine, and duboisine. His experiments, which seem conclusive, show that hyoscyamine, daturine, and duboisine, are *identical* with each other, and not merely closely related; and that atropine and hyoscyamine, though not actually identical, are isomeric in composition. He concludes, therefore, that there occur in nature only two mydriatic alkaloids—namely, atropine and hyoscyamine.—*New Remedies.* May, 1880.

Treatment of Eclampsia.—This is summed up by Dr. Trecoulat (*Thése de Paris*, 1879), in the words—" venesection, chloroform, chloral." Out of 55 cases treated by these means he had lost only 4. Bleeding should be free, and should be practised early in every case; it acts in two ways, by relieving the congestion of the nervous centres, particularly the medulla oblongata, and by removing from the total amount of blood in circulation a large proportion of the toxic element. Anæsthetics abolish peripheral sensibility and central nervous reflex action. Chloral acts similarly to chloroform, but more slowly, and its effects are more lasting; there is sometimes considerable difficulty in administering it, however, as it may be rejected by both the stomach and the rectum, while injection under the skin or into a vessel is not unattended by danger. It is, nevertheless, an indispensable agent in the treatment of eclampsia. Chloroform should be given unsparingly, and for a considerable period.—*Bull. Générale de Thérap.* 30th April, 1880.

Plastic Bronchitis.—In an interesting article on this subject, besides giving a resumé of the experience of other American physicians, Dr. Glasgow, of St. Louis, records a case that had been under his own observation for some time. His patient, a lad 17 years of age, had, a year before being seen by him, caught a violent cold which lasted two months. During the following six months he was perfectly well, with the exception of a slight hacking cough. He then noticed for the first time small bits of cast in the expectoration. At the same time there was a feeling of tightness in the chest, but he became quite free from this on removal to the country. On his return to town the old feeling of oppression recurred, and bits of membrane again appeared in the expectoration. One day he was suddenly seized with a violent chill, followed by high fever for about twenty-four hours, during which he had violent paroxysms of coughing with an intense feeling of suffocation. During one of these paroxysms a large mass was expectorated, which proved to be a beautifully branched bronchial cast. This gave relief, but in a few hours another similar one was brought up. The sense of oppression disappeared. Physical examination showed percussion normal, but a diminution of respiratory murmur over the middle of the left lung, near the angle of the scapula, where a few subcrepitant râles could be heard.

He was put upon iodide of potassium and syrup of the iodide of iron, and an inhalation of the etherial extract of tar, with carbolic acid, was employed nightly. Seventeen days after two large casts were again expectorated, and for a time small bits came away, but for more than a year he has now been in perfect health.

The first casts expectorated were of a pearly white colour, of firm consistency, the smaller branches presenting the appearance of fine, perfectly defined threads; the later casts showed a decided change in consistency and firmness, the external coats appearing softened, whilst the finer filaments lost their well defined, rounded form, and in some cases appeared as bundles of disintegrating fibrillæ. This change Dr. Glasgow believes he can truly ascribe to the action of the remedies, but leaves it an open question whether it is due to the iodide or to the inhalations.—*St. Louis Courier of Medicine.* February, 1880.—G. S. M.

Treatment of Gonorrhœa by Hydrate of Chloral Injections.—The slightly caustic and astringent taste of chloral suggested to Dr. Pasqua the idea that this remedy might prove useful in gonorrhœal discharges. He accordingly tried it in four cases, with very fair results. He directed that a quantity of a solution containing a gramme and a half of chloral to 120 grammes of rose water, should be injected twice a day; this caused slight smarting at first, which was soon followed by an agreeable sensation of coolness in the urethra. In three days urination was no longer painful, erection was less frequent, and the discharge clearer; in eight to ten days the cure was complete. In none of these four cases was there any complication observed; there was no indication of orchitis, stricture, or any of the other accidents which are apt to characterise the course of a badly treated gonorrhœa.—*Bull. Générale de Thérap.* 15th March, 1880.

The Metric System.—According to the *Med. and Surg. Reporter* for 11th October, 1879, this system of prescribing is not making, in the United States, that degree of progress which its promoters desire. On inquiries being made at several of the largest dispensing establishments in Philadelphia, it was ascertained that they seldom received a metric prescription, except from foreign physicians. Several sound reasons are given for this "absolute failure" of the metric system. When closely examined it has not that simplicity or fixity which its admirers have claimed. Its unit is based on a mathematical blunder, the metre not being the ten-millionth part of a quadrant of the meridian of Paris. In dispensing, it offers still greater facilities for error than the old system; this alone is a sufficient objection to its introduction, dangerous and even fatal mistakes having already occurred. Practically, great inconvenience is found in converting, *accurately*, apothecaries' into metric weights and measures. Another disadvantage is the necessity of prescribing fluids of all kinds by weight only, the volumes or cubic quantities being varying and uncertain. "The familiar '*q. s.*' or '*ad*—' of the old method sufficed to make the mixture equal a certain bulk; but the new system, at least as used in France and Germany, has no such convenient device. Not only does the difference in specific gravity lead to inaccuracy, but the various solids that are added also affect the bulk to a greater or less degree, so that it is impossible to predict the exact amount of the medicine the patient will get. Should the prescriber use syrup, the specific gravity of which is 1·317, as a vehicle, and assume that 30 grammes of it equal one ounce, which is true as regards water, he would unwittingly increase the dose of his active ingredient one-fourth; this might entail disastrous results. The system is wanting in uniformity also, one of the American Metric Bureaus insisting on the Continental plan of weighing all liquids, while another recommends the use of cubic centimetres—*volumes* for liquids. The metric system further seems to have offended the American national pride. Thus, the *Michigan Medical News* says:—"If we were dependent on the French and Germans for all, or even a great part of our scientific knowledge, we might feel it necessary to cater to this metric whim; but, inasmuch as the great English-speaking people lead the world in science as applied to the useful arts, and to medicine and surgery in particular, there is nothing improper in their insisting that their European brethren shall come back to the old time system from which they have departed."

Vesicant Collodion.—Dr. Hisch (*Union Médicale*) gives the following directions for this preparation:—

Rj.	Cantharides pulverised,	100 grammes.
	Sulph. ether,	150 grammes.
	Acetic acid,	20 grammes.

Mix and decant. In the saturated liquor of cantharadine thus obtained, dissolve 1 gr. 30 cgr. of gun-cotton to 60 gr. of the tincture. The action of this epispastic collodion is but slightly painful, confined to the exact spot to which it has been applied, and rapid, producing vesication in a few hours.—*La France Médicale.* No. 12. 1880.—G. S. M.

Right-Handedness.—Dr. J. A. Wyeth thus presents his views on this subject:—

1. Man is right handed by preference, as a result of his anatomical development.

2. The arrangement of the embryonic protoplasmic elements is such that the liver, developing on the right side, greatly outgrows its opposing viscus the spleen, and pushes the heart to the left of its original position in the median line, causing an obliteration of one of the two originally symmetrical arches of the aorta, and an obliquity of the remaining one.

3. This loss of symmetry involves an arrangement of the great vessels of the neck and upper extremities, by which the artery carrying the blood to the right arm is more favourably situated, and receives more blood than the one to the left arm, while the left carotid and vertebral arteries, supplying the left half of the encephalon, which presides over motion on the right side of the body, are more favourably situated, and convey more blood than the two vessels which have the same distribution on the opposite side.

4. This fact accounts for the development of the left half of the brain in excess of the right.

5. Education and training will overcome this natural tendency to dextral preference, will favour symmetrical muscular growth, and tend to equalise the two halves of the brain, and give a better cerebral development.—*Annals of the Brooklyn Anat. and Surg. Soc.* April, 1880.

A New Property of the Nervous System.—In a note sent to the Académie des Sciences, Brown-Séquard formulates the following conclusions:—

1st. Under the influence of a local irritation many parts of the brain are able to cause the inhibition (the arrest) of excitability to galvanism of several other parts of this nervous centre, or of the spinal cord, either of the same or of the opposite side.

2nd. The spinal cord, irritated at certain points, is able to cause the inhibition of the excito-motor properties of other parts of this nervous centre, at a great distance above or below the irritating lesion.

3rd. The sciatic nerve and the spinal cord can cause, on the side opposite to that on which they have been irritated by section, the inhibition of excitability to galvanism, and of other properties of the brain in all its parts, those parts in which the psycho-motor centres were supposed to have been localised being included.—*La France Médicale.* No. 87. 1879.—G. S. M.

Salicylic Acid and Salicylate of Soda in Sciatica and Neuralgia.—Dr. Abbot (*Boston Med. and Surg. Journal*) gives an account of three cases of sciatica, and three of acute facial neuralgia, in which these drugs were employed with success. He says:—"These cases seem to show that we have, in salicylic acid and its compounds, as reliable a remedy in acute neuralgia as in acute rheumatism. Perhaps they indicate a closer affinity between the diseases than has been generally suspected. Two of the cases had bad attacks of rheumatism. The cases, with the exception of the third case of sciatica, were all severe, and nothing could be more satisfactory than the very prompt and efficient relief which followed the exhibition of the remedy." He thinks that cases of a more chronic character will not be so amenable to this treatment.—*St. Louis Courier of Medicine.* December, 1879.—G. S. M.

Ossification of the Bony Framework of the Ear.—Buckner's conclusions on this subject (published in *Arch. f. Ohrenheilk*, vols. xiii and xiv), are the result at which he has arrived after an examination of 1,260 skulls. The examinations were made with the object of discovering the frequency of the various defects and rarefactions in the bone. The conclusions referred to are as follow:—

"The defects of ossification in the anterior wall of the external meatus are most commonly found in the skulls of children between the ages of one and five years; after the fifth year they become more and more rare. In adults, these defects in the meatus are more common than is generally supposed: they exist in 19·2 per cent of all cases. The skulls of females show these defects in the meatus more commonly than those of males.

"Defects in the anterior wall of the meatus of adult skulls are found to be equally common in all cases."

But Buckner's observations regarding the frequency and causation of openings in the tegmen tympani are, perhaps, most important; for we know that, by means of such openings in the roof of the tympanum, or middle ear, inflammation is frequently transmitted to the brain and its membranes. His investigations tend to show that these openings in and thinning of the bone, in this and other parts of the skull, are, as Dr. Flesch has suggested, due to the pressure on the bone exerted by the enlarging brain; and he observed a marked relation between the development of the impressiones digitatæ and juga cerebralia and that of the tympanic roof. Of 120 skulls examined as to this point, 44 showed thinning of the tegmen tympani. Of these 44 cases, 36, or 81·8 per cent, showed very marked impressiones digitatæ. It was also noted that in 73 per cent of the cases in which there existed a thinning or opening in the roof of the tympanum, there were similar changes on the roof of the orbit; and in many of these cases the upper wall of the carotid canal was also very thin.—*American Journal of Otology.* No. 3, 1879.—J. M.

Anæsthesia of the Larynx.—Dr. Glasgow, of St. Louis, having used the bromides, both locally and internally, for the purpose of producing anæsthesia of the larynx, without much success; and having also tried Bernatzic's solution of morphia and chloroform, with almost fatal results, has employed, for some time, both carbolic acid and chloral hydrate. The conclusions to which he has come are as follow:—

1st. Carbolic acid, in strong solutions (1 to 5 of water, by volume), produces anæsthesia of the larynx and relieves pain. The application causes an intense burning sensation, which lasts about twenty seconds; the anæsthetic condition continues about two hours.

2nd. The hydrate of chloral, in strong solution (ʒj. to ℥ij. of water), applied to the mucous membrane, produces anæsthesia. The application causes a severe burning pain, lasting over a minute; the anæsthesia does not continue longer than one half-hour.

3rd. The strength of the solution necessary to produce anæsthesia varies somewhat in different persons.

4th. It is recommended that the weaker solutions should be employed first, which may be followed by the stronger solutions. The first application is the only one causing pain.

5th. No bad results, either constitutional or local, have followed the application of strong solutions of carbolic acid.—*St. Louis Courier of Medicine.* December, 1879.

Ligature of the Middle Meningeal Artery in Compound Fracture of the lateral parts of the Skull.—In commenting on a successful case of the above description, published by Prof. Hueter, M. Marchant states that an examination of the pathological and clinical facts of all the recorded cases has led him to the following conclusions:—

1st. Ruptures of the middle meningeal artery, in direct compound fractures of the lateral portions of the skull, do not present the same features in children, adults, and aged persons.

2nd. In children, by reason of the intimate adhesion of the dura mater to the bone, the blood has little tendency to be effused into the interior of the cranium. The effusion is *rather* *extra-cranial.* This external hæmorrhage may be met by ligature of the middle meningeal artery, an operation which is rendered comparatively easy by the normal position of the artery.

3rd. In adults the condition is quite the reverse. That there is almost always separation of the dura mater, is proved by a great number of facts. The blood is effused in a space so fixed in size as to merit the name of the "separable zone of the dura mater." Intra-cranial hæmorrhage is the rule; extra-cranial is the exception.

If, suspecting intra-cranial hæmorrhage from the existence of compression, or because there is external hæmorrhage, the surgeon wishes to interfere, in proceeding to tie the middle meningeal artery he will meet with almost insuperable obstacles. These are:—1. The size of the clot to be displaced. 2. The position of the artery—drawn back some 4 or 5 ctm. towards the median plane. 3. The difficulty of recognising, in most cases, the point where the artery has been wounded; and 4. The difficulty of dealing with an artery which offers little hold to the ligature.—*La France Médicale.* Nos. 1 and 2. 1880.—G. S. M.

Radical Cure of Hernia by Hypodermic Injection.—Dr. J. H. Warren reports having obtained excellent results in the treatment of hernia of all varieties, by the subcutaneous injection of various fluids into the tissues in front of the hernial rings. For infants, and children to the age of five, he uses an aqueous extract of oak bark; for children of five to fifteen, the extract of oak bark, distilled to the consistency of glycerine, with ten drops of sulphuric ether to the drachm; for old or long standing hernia, congenital or otherwise, a solution composed of four drachms of the last mentioned extract, one of sulphuric ether, and one of absolute alcohol, with one to two grains of sulphate of morphia. The syringe is made to hold two drachms, and the needle is spirally twisted and pierced with holes on the sides; the fluid is thus ejected on the parts at right angles. This proceeding excites slight fever, and a certain amount of local inflammation; the parts become matted together in such a way as, in the great majority of cases, to effectually close the hernial openings. After the operation the patient should keep in bed for about a fortnight. The parts should also be supported for some time by a compress and bandage, or light spring truss. Over-exertion or great straining must be avoided for several months, till the rings are consolidated. Twelve operations are here noted; three were partial failures, the rest completely successful.—*Med. and Surg. Rep.* 27th March, 1880.

Persistent Priapism.—Dr. G. L. Peabody gives the following as the most important facts in connection with priapism:—

1. It is to be regarded as an occasional symptom of leucocythæmia.

2. It may come on without any assignable cause, in a patient apparently in perfect health; though it usually attacks anæmic persons. It sometimes follows sexual intercourse, though this may be looked on as exceptional.

3. It may last from a few days to a few months, and has lasted a longer time, though rarely.

4. It is extremely painful, causing insomnia, nervous exhaustion, and general physical prostration.

5. It has occasionally yielded to profuse blood-letting. This procedure is not to be recommended, except in robust subjects. Free incisions into the corpora cavernosa have occasionally caused its subsidence; but they are to be regarded as unsafe, on account of the prolonged suppuration which has followed them. Medical treatment has proved entirely useless, as far as the cure of the condition is concerned. Local applications, containing camphor and other soothing ingredients, have diminished the pain.

6. The prognosis is not good, both on account of the cachexia with which it is commonly accompanied, and on account of the fact that it is frequently followed by impotence.

7. The corpus spongiosum is usually not affected.—*New York Med. Journal.* May, 1880.

Telegraphists' Cramp.—(*Gaz. des Hôp.*) Since the author's attention was first directed, in 1875, to this functional disease, he has had many opportunities of observing it. It occurs most frequently in workers at the Morse machine. More than any of the other functional cramps, it is found dependent largely upon the temperament of the individual concerned, and is powerfully influenced by the condition of the nerve centres. The feeling of cramp occurs, after a shorter period of service, in officials of a nervous and excitable nature, and their general health suffers very soon. These conditions have a greater influence than the frequency of the movements, especially if the latter proceed in a quiet and regular manner. The author mentions the case of an official who had used successively the thumb, forefinger, and middle finger; with each of these fingers he could manipulate for three or four months, but one after the other was attacked by cramp. At length he made use of his fist, which also, after a certain time became useless.

The movements with the machine are made from above downwards, either for the whole hand or for a single finger; in one instance this vertical movement having become difficult, the idea occurred to the man to change the direction of the movement to the horizontal, by attaching to the lever a string, which turned round a support. To his astonishment, however, he soon found that these movements also produced cramps. The same thing occurs in this cramp as in writer's cramp, where it happens now and then that, while originally it existed only in the right hand, it comes on in the left. This has also been observed in the cramp of violinists. In telegraphists, however, the general symptoms are more numerous and important. It is not to be forgotten that a telegraphist of ordinary dexterity receives or forwards per hour about 7,000 signs, or in a working day of seven hours, 49,000 signs. In order that no mistake may arise, the manipulations must be performed with complete regularity, the various pauses must be of a perfectly definite duration, &c., &c. It is apparent, therefore, that, besides the mere mechanical labour, the work of a telegraphist imposes a heavy and continuous tax on the brain. General symptoms, such as palpitation, giddiness, sleeplessness, and perhaps also weakness of vision, are more frequent in females. As in other cases of brain irritation, a feeling of constriction is complained of, which seems to hold the occiput as in a vice. This feeling, frequent enough in business men, occurs particularly when the already exhausted intellectual functions are forced, and is followed by weariness and exhaustion—physical and moral atony—the memory begins to fail, and it even appears that insanity may ensue, if this state is neglected for some years.—*Deutsche Med. Wochenschrift.* March, 1880.—W. G. D.

Osseous Ankylosis of the Knee, Operated on by Barton's Method. By MALACHY J. KILGARRIFF, F.R.C.S.I., Surgeon to the Mater Misericordiæ Hospital, Dublin.—"M. H., aged 30, the subject of faulty bony ankylosis of the knee, was admitted into Jervis Street Hospital on the 4th September, 1877. On examination, I found the leg bent at a right angle, the knee immovable, the anterior and lateral aspects being rough and irregular, and covered with a thin slate-coloured cicatrix. On the 16th September, assisted by my colleagues, I proceeded to operate. Ether having been administered, I cut on the lower portion of the thigh a triangular flap, with the base on the outside exposing the femur. I then passed carefully under the bone a curved metallic spatula, and with a saw removed a wedge shaped piece of bone which had its base in front, and measured vertically three quarters of an inch. I then straightened the limb without difficulty, and placed it in a splint, the outside piece of which reached the axilla while the inner part fell short of the groin, the lower portion was a box and joined the thigh part at a very obtuse angle. The dressing consisted of lint, steeped in carbolic oil, and a solution of permanganate potash was used to wash the site of operation. The wound suppurated for a few weeks, then closed in, and the divided surfaces of the bone were early united by a firm osseous bond.

"In somewhat less than three months she was able to lean on the leg, and, aided by crutches, she could without difficulty walk about the ward."

The above operation differed from Barton's in two particulars, which Mr. Kilgarriff regards as an advantage—viz., cutting through the bone, which left no spiculæ to pierce the fascia behind, and having the base of the flap at the outside averted the possibility of bagging of matter, and made the wound more accessible for dressing.

In Barton's method the bone posteriorly was uncut, and the flap was on the inside.

In the above case there was no shortening, and the patient could walk well and discharge her duties as a servant.—*Dublin Journal of the Med. Sci.*, March 1880.—J. C. R.

Case of Sclerema in an Adult.—M. X., aged 33, consulted M. Aubert in March, 1877, for a cutaneous affection which had first appeared in August, 1876. Father and mother have the same disease. Of three brothers, one died of pneumonia, one of chronic laryngitis, and one is alive and well. Patient looks healthy. He relates that in August, 1876, he was attacked by weakness, uneasiness, and loss of appetite. He felt, at the same time, his body, and especially his hands, very hot, and often plunged them in cold water, the skin of the legs also felt rigid and tense when he stooped. In November following the skin on the backs of his hands and wrists became rigid, this condition afterwards extending to forearms and arms. When M. Aubert first saw him, the skin of the arms, forearms, and backs of the hands was hard, white, and rigid, reminding one of a cast of the fingers in white wax, preserved and a little hard. There was no perspiration in the affected parts. The backs of the feet, the legs, and some spaces on the thighs presented an analogous condition. This caused a painful feeling of tension, and a little difficulty in walking, and rendered complete flexion of the fingers impossible. The treatment consisted in vapour baths, the affected parts to be covered during the night with indiarubber cloths; Vals water to be taken internally. The patient gradually improved. A month later shampooing and inunction with oil were practised, and in a few months the cure was complete. M. Aubert remarks that the pathology of sclerema in the adult is completely unknown, that it is a special disease, and must not be confounded with sclerosis of the skin, which is simply an anatomical lesion, and may occur in many different affections. The treatment should be directed to restoring and maintaining the secreting power of the skin, and after recovery the patient should be warmly clothed.—*Lyon Médicale.* 24th August, 1879.—J. M.

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